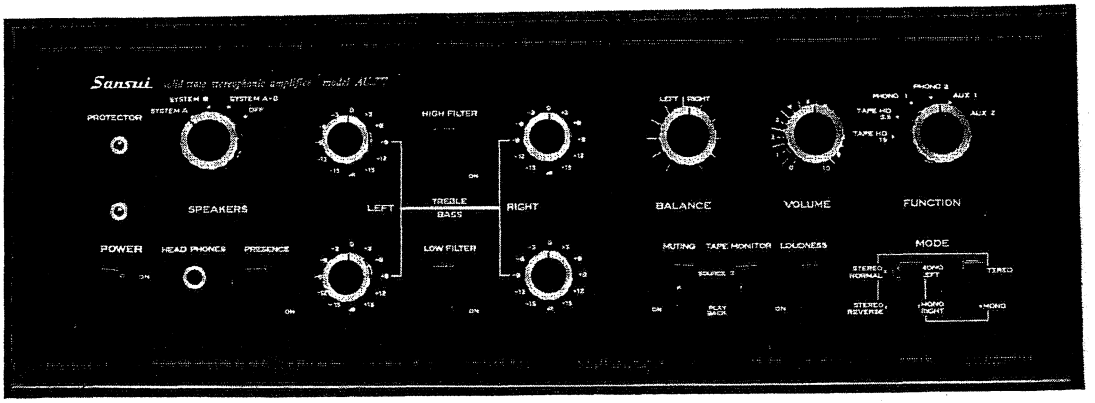
SERVICE MANUAL

SOLID-STATE STEREOPHONIC AMPLIFIER

AU-777

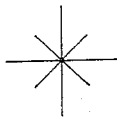


Sansui

SANSUI ELECTRIC COMPANY LIMITED

SANSUI

SOLID STATE
STEREOPHONIC
PRE-MAIN AMPLIFIER



AU-777

HOW TO USE THIS SERVICE MANUAL

1. Look up the type of trouble you are confrented with in either the General or Amplifier Troubleshooting charts provided in this manual.
2. By referring to the charts, isolate the trouble to a particular unit or part. (See the column titled "What To Do" in the General chart and "Check Point" in the Amplifier Troubleshooting chart).
3. Locate the section of the chassis in which the part is located by using the co-ordinates (Column D) in the Parts List pp. 21-25.
4. Using the co-ordinates given in the Parts List (Column C), pinpoint the position of the part in the Schematic Diagram pp. 13-14

NOTE: Much of the information contained in this manual has been prepared for use by qualified service repairmen. Please read your Warranty thoroughiy before attempting any internal adjustments on your own.

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GENERAL SECTION

If the amplifier is otherwise operating satisfactorily, the more common causes of trouble may generally be attributed to the following:

1. Incorrect connections or loose terminal contacts. Check the speakers, record player, tape recorder, antenna and line cord.
2. Improper operation. Before operating any audio component, be sure to read the monufacturer's instructions
3. Improper location of audio components. The proper positioning of components, such as speakers and turntable, is vital to stereo.
4. Defective audio components.

The following are some other common causes of malfunction and what to do about them.

PROGRAM SOURCE	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
Tuner	Constant or intermittent noise heard at certain times or in a certain area	* Discharge or oscillation caused by electrical appliances, such as fluorescent lamp, TV set, D.C. motor, rectifier and oscillator * Natural phenomena, such as atmospheric conditions, static, stray and thunderbolts * Insufficient antenna input due to reinforced concrete walls or long distance from the station * Wave interference from other electrical appliances	* Attach a noise limiter to the electrical appliance that causes the noise, or attach it to the power source of the amplifier. * Install an outdoor antenna and ground the amplifier to raise the signal-to-noise ratio. * Reverse the power cord plug-receptacle connections. * If the noise occurs at a certain frequency, attach a wave trap to the ANT. input. * Keep the set ata in proper distance from other electrical appliances.
	Noise heard at a particular time of the a day, in a certain area or over part of the dial during AM reception	* This results from the nature of AM broadcast	* Install the antenna for maximum antenna efficiency. * In some cases, the noise can be eliminated by grounding the amplifier or reversing the power cord plug-receptacle connections.
	High-frequency noise during AM reception	* Adjacent-channel interference or beat interference * TV set too close to the audio system	* Although such noise cannot be eliminated by the amplifier, it is advisable to set the TREBLE control to the minimum counterclockwise position possible and switch on the HIGH FILTER. * Keep the TV set at a proper distance from the audio system.
	Noise during FM reception	* Poor noise limiter effect or too low S/N ratio due to insufficient antenna input Note: FM reception is affected considerably by the broadcasting station's power and antenna efficiency. Asa result, you may receive one station quite well while having difficulty in receiving another station.	* Install the antenna for maximum signal strength. * If this does not prove effective, use an outdoor antenna designed exclusively for FM. When you use a TV antenna for both TV and FM with the help of a divider, make sure the TV reception is not affected. * An excessive long antenna may cause noise.
	"Scratching noise" heard during FM reception	* Ignition noise caused by an auto, motorcycle or the like	* Keep the antenna and its lead-in wire away from heavy traveled roads or raise the antenna input.

PROGRAM SOURCE	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
(continued)	Noise heard during FM stereo, but not heard during FM mono reception	* The service area of the FM stereo broadcast is only half that of the FM mono broadcast	* Install the antenna for maximum antenna input. * Switch on the HIGH FILTER and/or set the TREBLE control to the minimum counterclockwise position possible.
Record player, tape recorder or tape deck	Hum or howling	* Record player placed directly on the speaker box * Use of wire other than shielded wire * Loose terminal contact * Shielded wire too close to the line cord, fluorescent lamp or other electrical appliances * Nearby amateur radio station or TV transmission antenna	* Put a cushion under the record player. * Experiment with several different arrangements before deciding on the final positions of the speaker and record player. * Use a shielded cord for connections. * Switch on the LOW FILTER. * The connecting cord should be as short as possible. * Don't raise the BASS loudness too much * Consult the nearest Radio Regulatory Bureau.
	Surface noise	* Worn or old record * Worn pick-up needle * Needle covered with dust * Improper needle pressure	* Set the TREBLE control to the minimum counterclockwise position possible and/or switch on the HIGH FILTER. * Clean or replace the needle.
Common to all program sources	The BALANCE control is not in the mid-position when equal sound comes from both left and right channels.	* Due to imperfections in program material, variations in speaker output or asymmetry in room acoustics, the BALANCE control is not always set to the mid-position.	* Set the MODE switches to MONO and adjust the BALANCE control so that the sound is heard from a point midway between the two speakers.

AMPLIFIER TROUBLESHOOTING CHART

OVER ALL PROGRAM SOURCES

SYMPTOM	PROBABLE CAUSE		CHECK POINT
NO sound over all program sources	A. Defective speaker	1. Broken speaker cord	Check continuity of speaker and cord
		2. Voice coil, shorting or disconnection	Repair broken cord or replace speaker
	B. No power	1. No power comes to the power source	
		2. Defective on-off switch	S_{12}
		3. Defective power cord	
		4. Loose plug contact	PU_{001}
		5. Fuse blowing	F_{003}
		If the fuse should blow as soon as it is replaced, the trouble may be attributed to:	
		a. Power transformer shorting	T_{001}
		b. Electrolytic capacitor shorting	C_{002}, C_{006}
		c. B circuit shorting	Check B circuit voltage with a tester.
		d. Diode shorting	Diode rectifier
		6. Broken primary winding of power transformer	T_{001}
	C. Defective power circuit	Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in power circuit and replace defective element (R_{001}, R_{906}, D_{001}~D_{004}, D_{903}, D_{904}, C_{006}, C_{007} etc.)
	D. Defective low-frequency circuit	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in low-frequency circuit and replace defective element.
		Note: If the PROTECTOR indicator should light up, push the POWER switch OFF, and after about 5 seconds, push it ON. If the indicator should still light up, push it OFF again and check for shorting of speaker terminals and improper connections between them.	
		2. Blown fuse	F_{001}~F_{003}
		If the fuse should blow as soon as it is replaced, the trouble may be attributed to:	
		a. Defective main amplifier section	
		b. Shorted power transistor	TR_{811}~TR_{814}
		c. Output terminals in contact with each other	
		3. Defective transistor	Check voltage in each section.
		4. Electrolytic capacitor shorting	Check voltage in each section.
	E. Troubles other than electrical	1. TAPE MONITOR switch is in PLAY BACK position	Turn the TAPE MONITOR switch to SOURCE.
		2. Incorrect use of SPEAKER selector switch	Speaker selector switch has to be in SYSTEM A position when the speaker systems are connected to the SYSTEM A terminals.

SYMPTOM	PROBABLE CAUSE		CHECK POINT
(continued)			Speaker selector switch has to be in SYSTEM B position when the speaker systems are connected to the SYSTEM B terminals.
Weak sound over all program sources	A. Defective speaker circuit	Voice coil shorting	Check voice coil for short circuit.
	B. Defective power circuit	Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in power circuit and replace defective element.
	C. Defective low-frequency circuit	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM" 2. Insufficient capacity or short-circuit of capacitor 3. Aging transistor	Measure voltage in low-frequency circuit and replace defective element. C_{705}~C_{790}, C_{801}~C_{832} TR_{701}~TR_{708}, TR_{801}~TR_{814}
Distortion over all program sources	A. Defective speaker	1. Defective voice coil 2. Defective cone or damper	Check and replace.
	B. Defective power circuit	Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in power circuit and replace defective element.
	C. Defective low-frequency circuit	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM" 2. Aging or weak transistor	Measure voltage in low-frequency circuit and replace defective element. TR_{701}~TR_{708}, TR_{801}~TR_{814}, TR_{601}~TR_{604}
Hum over all program sources	A. Defective power circuit	Insufficient capacity of capacitor	C_{002}~C_{007}
	B. Defective low-frequency circuit	1. Insufficient capacity of capacitor 2. Fixed resistor blown	C_{809}, C_{810}, C_{819}, C_{820} R_{825}, R_{826} and other fixed resistors
Noise over all program sources	A. Defective speaker	1. Defective voice coil 2. Inner contact of speaker components 3. Defective cone or damper	
	B. Defective power circuit	Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in power circuit and replace defective element.
	C. Defective low-frequency circuit	1. Aging or weak transistor 2. Defective master volume	TR_{601}~TR_{604}, TR_{701}~TR_{708}, TR_{801}~TR_{814} VR_{801}, VR_{802}
SPEAKER switch does not work	A. Defective headphone B. Speaker selector switch circuit defective		S_{11a}, S_{11b} S_{11c}, S_{11d}, S_{11e}
HIGH FILTER switch does not work	Defective FILTER circuit		S_{9a}, S_{9b}, C_{781}, C_{782}

AMPLIFIER TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE		CHECK POINT
LOW FILTER switch does not work	Defective FILTER circuit		S_{7a}, S_{7b}, C_{765}~C_{768}
LOUDNESS switch does not work	Defective LOUDNESS circuit		C_{701}~C_{704}, R_{701}, R_{702}, VR_{701}, VR_{702}, S_{4a}, S_{4b}
TONE CONTROL does not work	Defective TONE CONTROL circuit	1. Shorting or disconnection	R_{705}~R_{732}, R_{745}~R_{782}, C_{707}~C_{728}, C_{731}~C_{738}, C_{745}~C_{760}
		2. Improper wiring or defective resistor	S_{5a}, S_{5b}, S_{6a}, S_{6b}
		3. Tone control switch defective	S_{6c}, S_{6d}
MUTING switch does not work	Defective MUTING circuit		R_{7105}~R_{7108}, S_{8a}, S_{8b}

FOR USE WITH A RECORD PLAYER (MAGNETIC) OR A TAPE DECK

SYMPTOM	PROBABLE CAUSE		CHECK POINT
No sound	A. Program source defective		Check and repair or replace.
	B. Defective overall section		See "No sound over all program sources".
	C. Defective equalizer amplifier	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in equalizer amplifier section and replace defective element.
		2. Shorting capacitor	C_{601}, C_{603}, C_{604}, C_{608}, C_{610}, C_{611}, C_{615}~C_{618}
		3. Loose contact of rotary switch	S_{1a}, S_{1b}, S_{1c}, S_{1d}, S_{1e}, S_{1f}
		4. Loose contact of input terminal or pin plug	
		5. Defective resistor	R_{602}~R_{608}, R_{615}~R_{621}
Weak sound	A. Program source defective		Check and repair or replace.
	B. Defective overall section		See "Weak sound over all program sources".
	C. Defective equalizer amplifier	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in equalizer amplifier section and replace defective element.
		2. Divergence of capacity of capacitor	C_{601}~C_{604}, C_{608}~C_{611}
		3. Loose contact of rotary switch	S_{1a}~S_{1f}
		4. Loose contact of input terminal or pin plug	Check and repair.
		5. Weak or aging transistor	TR_{601}~TR_{604}

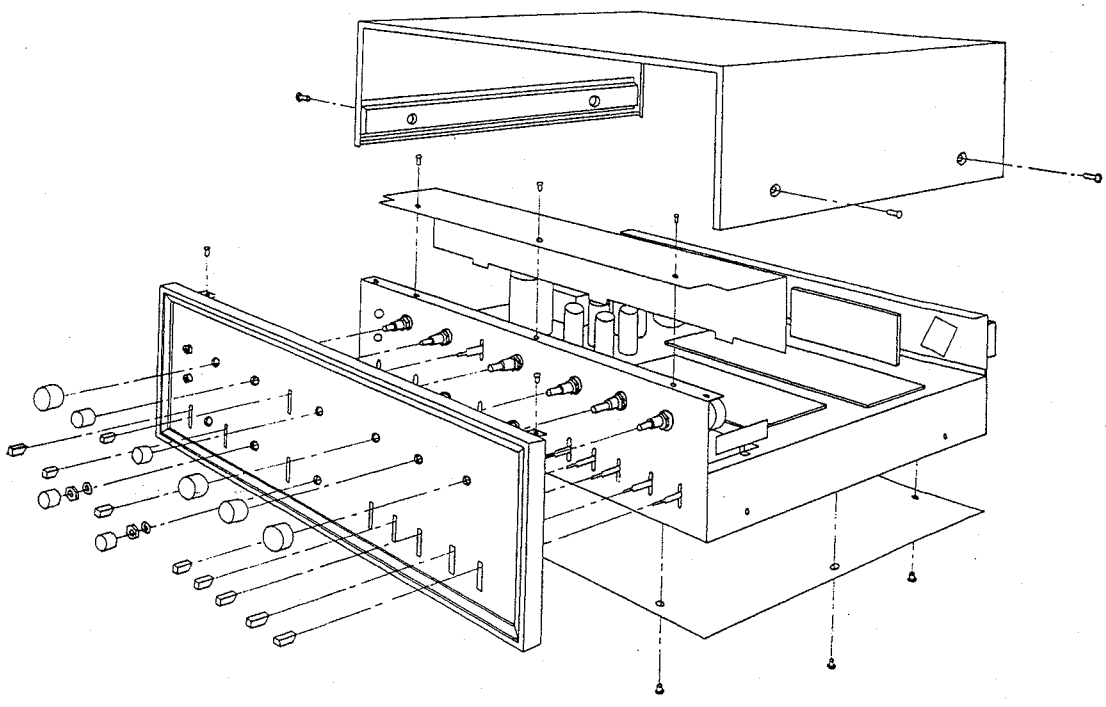
SYMPTOM	PROBABLE CAUSE		CHECK POINT
Distortion	A. Program source defective		Check and repair or replace.
	B. Defective overall section		See "Distortion over all program sources".
	C. Defective equalizer amplifier	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in equalizer amplifier and replace defective element.
		2. Capacitor, shorting or disconnection	C_{601}~C_{604}, C_{608}~C_{611}
		3. Defective resistor	R_{602}~R_{612}, R_{615}~R_{625}
		4. Weak or aging transistor	TR_{601}~TR_{604}
Hum	A. Program source defective		Check and repair or replace.
	B. Amplifier is O.K.	Improper connections	See "GENERAL SECTION".
	C. Defective overall section		See "Hum over all program sources".
	D. Defective equalizer amplifier	Insufficient capacity of capacitor	C_{002}, C_{005}
Noisy	A. Program source defective		Check and repair or replace.
	B. Amplifier is O.K.		See "GENERAL SECTION".
	C. Defective overall section		See "Noise overall program sources"
	D. Defective equalizer amplifier	1. Divergence of voltage specified in "SCHEMATIC DIAGRAM"	Measure voltage in equalizer amplifier and replace defective element
		2. Capacitor, shorting or blowing	C_{601}~C_{604}, C_{608}~C_{611}
		3. Defective resistor	R_{602}~R_{604}, R_{615}~R_{630}
		4. Weak or aging transistor	TR_{601}~TR_{604}

AMPLIFIER TROUBLESHOOTING CHART REMOVING THE FRONT PANEL, BONNET AND BOTTOM PLATE

OTHER PROGRAM SOURCES

SYMPTOM	PROBABLE CAUSE	CHECK POINT
A tuner connected to AUX inputs does not work normally.	* Original program defective * Improper or incorrect connection * Amplifier defective	See "Over all program sources".
A tape recorder connected to the amplifier does not work normally.	* Original program defective * Improper or incorrect connection * Amplifier defective	See "Over all program sources".
Broadcast is not recorded well on a tape through the amplifier.	* Defective tuner * Recording tape or tape recorder defective	Check and repair or replace.
Poor recording from records or tapes.	* Tape or tape recorder defective * Improper or incorrect connection * Records, record players, tape heads or an AUX inputs defective * Equalizer amplifier section defective	Check and repair or replace. Check and correct. Check and repair or replace. See "Defective equalizer amplifier".

EXPLODED VIEW OF CHASSIS

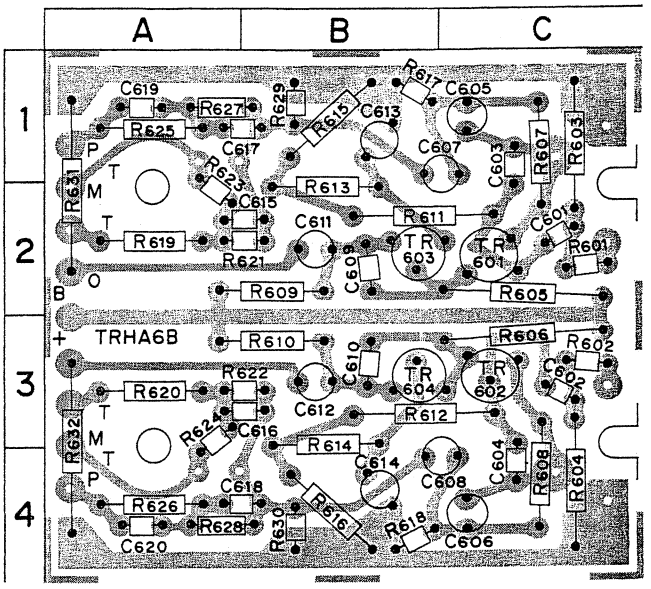


PRINTED CIRCUIT SHEETS

HEAD AMPLIFIER (TRHA-6B)

POSITION OF PARTS

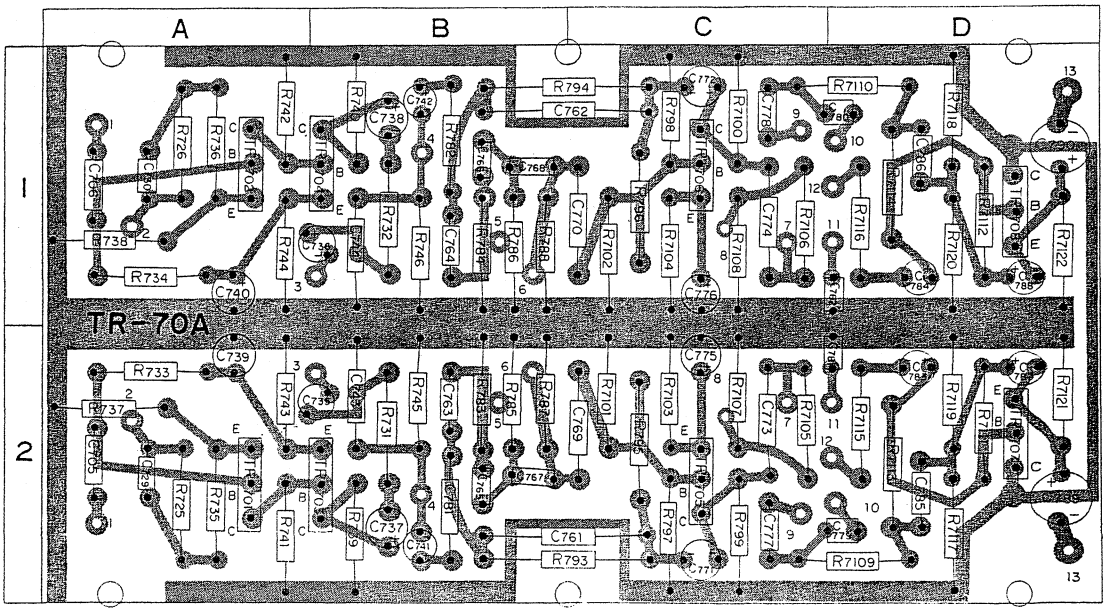
R601 . . . . 2 C	R616 . . . . 4 B	R631 . . . . 2 A	C613 . . . . 1 B
R602 . . . . 3 C	R617 . . . . 1 B	R632 . . . . 3 B	C614 . . . . 4 B
R603 . . . . 1 C	R618 . . . . 4 B		C615 . . . . 1 B
R604 . . . . 4 C	R619 . . . . 2 A	C601 . . . . 2 C	C616 . . . . 4 B
R605 . . . . 2 C	R620 . . . . 3 A	C602 . . . . 3 C	C617 . . . . 1 A
R606 . . . . 3 C	R621 . . . . 2 A	C603 . . . . 1 C	C618 . . . . 4 A
R607 . . . . 1 C	R622 . . . . 3 A	C604 . . . . 4 C	C619 . . . . 1 A
R608 . . . . 4 C	R623 . . . . 2 A	C605 . . . . 1 C	C620 . . . . 4 A
R609 . . . . 2 B	R624 . . . . 3 A	C606 . . . . 4 C	
R610 . . . . 3 B	R625 . . . . 1 A	C607 . . . . 1 B	TR601 . . 2 C
R611 . . . . 2 B	R626 . . . . 4 A	C608 . . . . 4 B	TR602 . . 3 C
R612 . . . . 3 B	R627 . . . . 1 A	C609 . . . . 2 B	TR603 . . 2 B
R613 . . . . 2 B	R628 . . . . 4 A	C610 . . . . 3 B	TR604 . . 3 B
R614 . . . . 3 B	R629 . . . . 1 B	C611 . . . . 2 B	
R615 . . . . 1 B	R630 . . . . 4 B	C612 . . . . 3 B	



PRE-AMPLIFIER (TR-70A)

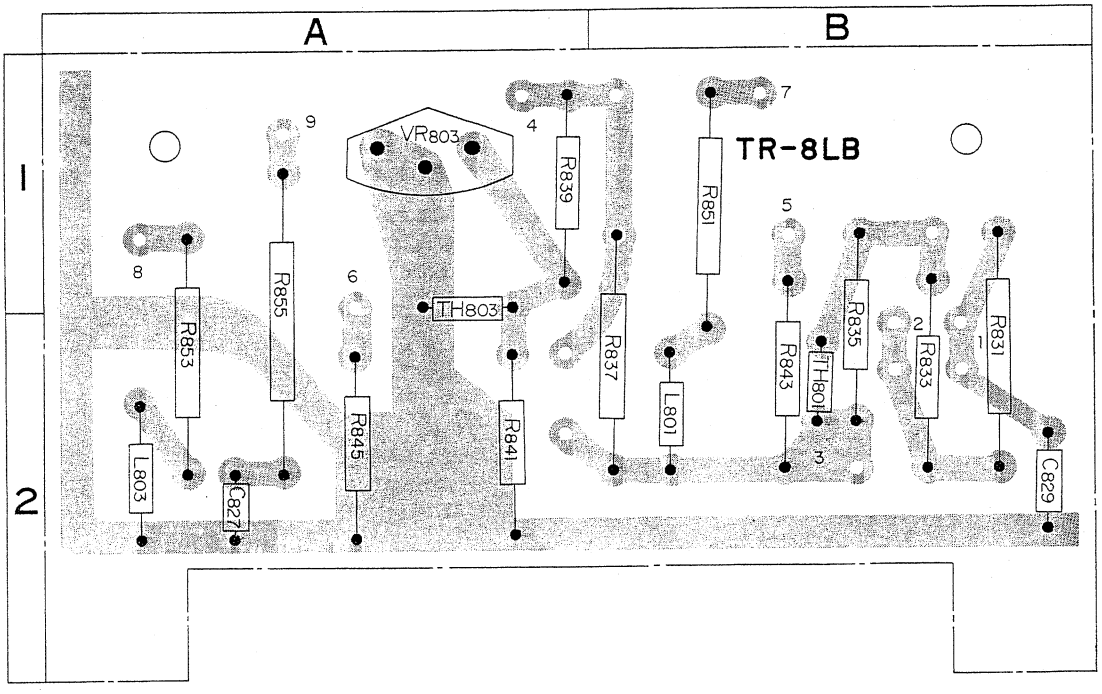
POSITION OF PARTS

R725 . . . . 2 A	R788 . . . . 1 B	R7104 . . 1 C	R7116 . . 1 D	C737 . . . . 2 B	C765 . . . . 2 B	C777 . . . . 2 C	C789 . . . . 2 D
R726 . . . . 1 A	R793 . . . . 2 B	R7105 . . 2 C	R7119 . . 2 D	C738 . . . . 1 B	C766 . . . . 1 B	C778 . . . . 2 C	C790 . . . . 1 D
R731 . . . . 2 B	R794 . . . . 1 B	R7106 . . 1 C	R7120 . . 1 D	C739 . . . . 2 A	C767 . . . . 2 B	C779 . . . . 2 D	
R732 . . . . 1 B	R795 . . . . 2 C	R7107 . . 2 C	R7121 . . 2 D	C740 . . . . 1 A	C768 . . . . 1 B	C780 . . . . 1 D	TR701 . . 2 A
R733 . . . . 2 A	R796 . . . . 1 C	R7108 . . 1 C	R7122 . . 1 D	C741 . . . . 2 A	C769 . . . . 2 B	C781 . . . . 2 D	TR702 . . 1 A
R781 . . . . . 1 A	R797 . . . . 2 C	R7109 . . 2 D		C742 . . . . 1 A	C770 . . . . 1 A	C782 . . . . 1 D	TR703 . . 2 B
R782 . . . . 1 B	R798 . . . . 1 C	R7110 . . 1 D	C705 . . . . 2 A	C743 . . . . 2 B	C771 . . . . 2 C	C783 . . . . 2 D	TR704 . . 1 B
R783 . . . . 2 B	R799 . . . . 2 C	R7111 . . 2 D	C706 . . . . 1 A	C744 . . . . 1 B	C772 . . . . 1 C	C784 . . . . 1 D	TR705 . . 2 C
R784 . . . . 1 B	R7100 . . 1 C	R7112 . . 1 D	C729 . . . . 2 A	C761 . . . . 2 B	C773 . . . . 2 C	C785 . . . . 2 D	TR706 . . 1 C
R785 . . . . 2 B	R7101 . . 2 C	R7113 . . 2 D	C730 . . . . 1 A	C762 . . . . 1 B	C774 . . . . 1 C	C786 . . . . 1 D	TR707 . . 2 D
R786 . . . . 1 B	R7102 . . 1 C	R7114 . . 1 D	C735 . . . . 2 A	C763 . . . . 2 B	C775 . . . . 2 C	C787 . . . . 2 D	TR708 . . 1 D
R787 . . . . 2 B	R7103 . . 2 C	R7115 . . 2 D	C736 . . . . 1 A	C764 . . . . 1 B	C776 . . . . 1 C	C788 . . . . 1 D	



PRINTED CIRCUIT SHEETS

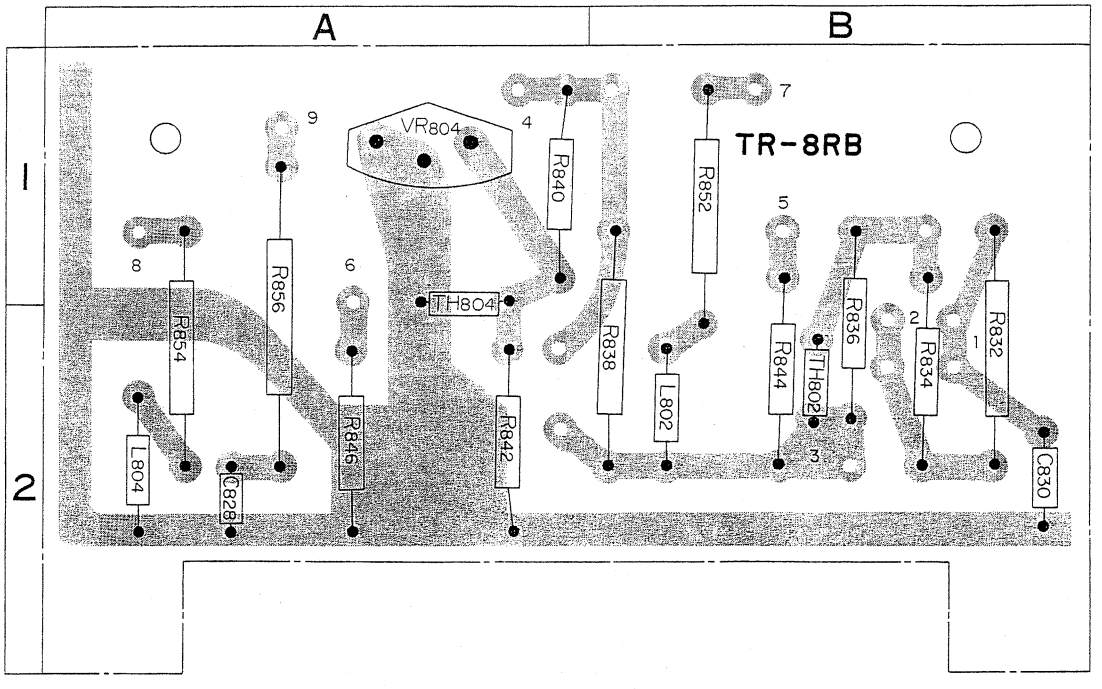
MAIN AMPLIFIER (TR-8LB)



POSITION OF PARTS

R831	2 B
R833	2 B
R835	2 B
R837	2 B
R839	1 A
R841	2 A
R843	2 B
R845	2 A
R851	1 B
R853	2 A
R855	2 A
C827	2 A
C829	2 B
VR803	1 A
TH801	2 B
TH803	2 A
L801	2 B
L803	2 A

MAIN AMPLIFIER (TR-8RB)



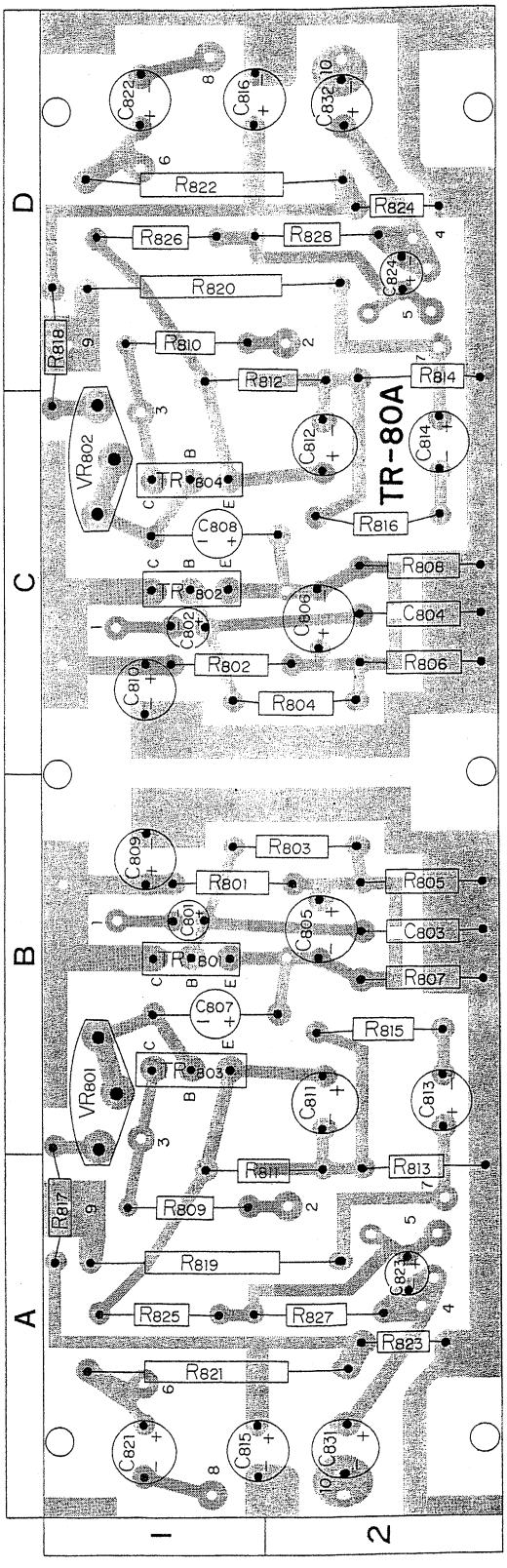
POSITION OF PARTS

R832	2 B
R834	2 B
R836	2 B
R838	2 B
R840	1 A
R842	2 A
R844	2 B
R846	2 A
R852	1 B
R854	2 A
R856	2 A
C828	2 A
C830	2 B
VR804	1 A
TH802	2 B
TH804	2 A
L802	2 B
L804	2 A

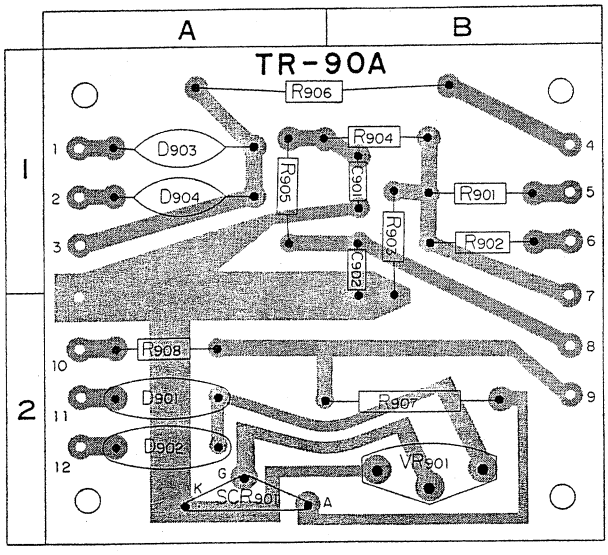
MAIN AMPLIFIER DRIVER (TR-80A)

POSITION OF PARTS

R801 . . . . 1 B	R813 . . . . 2 A	R825 . . . . 1 A	C808 . . . . 1 C	C824 . . . . 2 D
R802 . . . . 1 C	R814 . . . . 2 D	R826 . . . . 1 D	C809 . . . . 1 B	C831 . . . . 2 A
R803 . . . . 2 B	R815 . . . . 2 B	R827 . . . . 2 A	C810 . . . . 1 C	C832 . . . . 2 D
R804 . . . . 2 C	R816 . . . . 2 C	R828 . . . . 2 D	C811 . . . . 2 B	
R805 . . . . 2 B	R817 . . . . 1 A		C812 . . . . 2 C	VR801 . . 1 B
R806 . . . . 2 C	R818 . . . . 1 D	C801 . . . . 1 B	C813 . . . . 2 B	VR802 . . 1 C
R807 . . . . 2 B	R819 . . . . 1 A	C802 . . . . 1 C	C814 . . . . 2 C	
R808 . . . . 2 C	R820 . . . . 1 D	C803 . . . . 2 B	C815 . . . . 1 A	TR801 . . 1 B
R809 . . . . 1 A	R821 . . . . 1 A	C804 . . . . 2 C	C816 . . . . 1 D	TR802 . . 1 C
R810 . . . . 1 D	R822 . . . . 1 D	C805 . . . . 2 B	C821 . . . . 1 A	TR803 . . 1 B
R811 . . . . 2 A	R823 . . . . 2 A	C806 . . . . 2 C	C822 . . . . 1 D	TR804 . . 1 C
R812 . . . . 2 D	R824 . . . . 2 D	C807 . . . . 1 B	C823 . . . . 2 A	



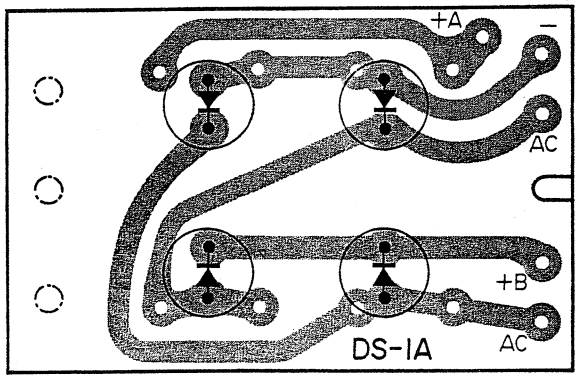
POWER BLOCK (TR-90A)



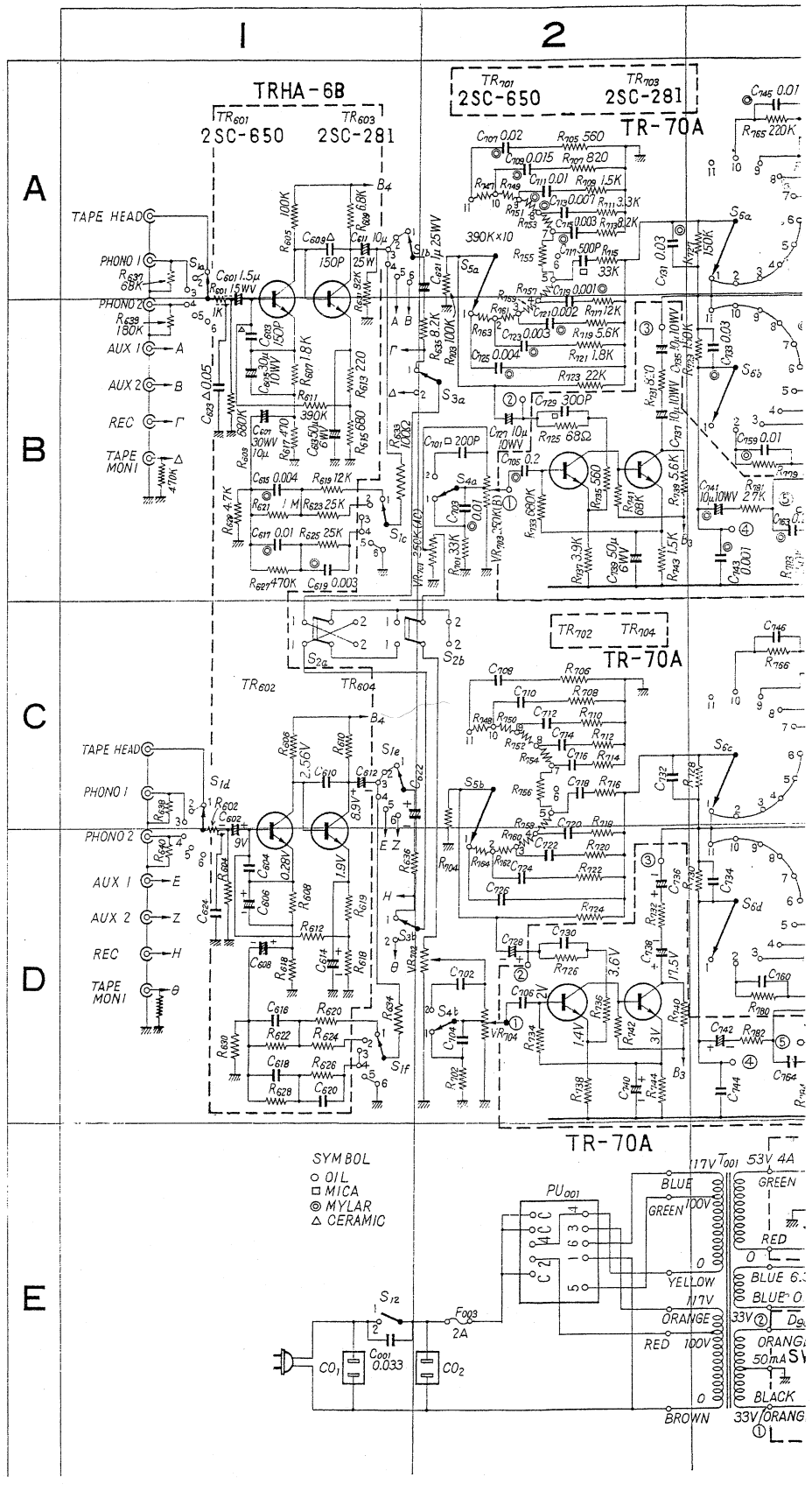
POSITION OF PARTS

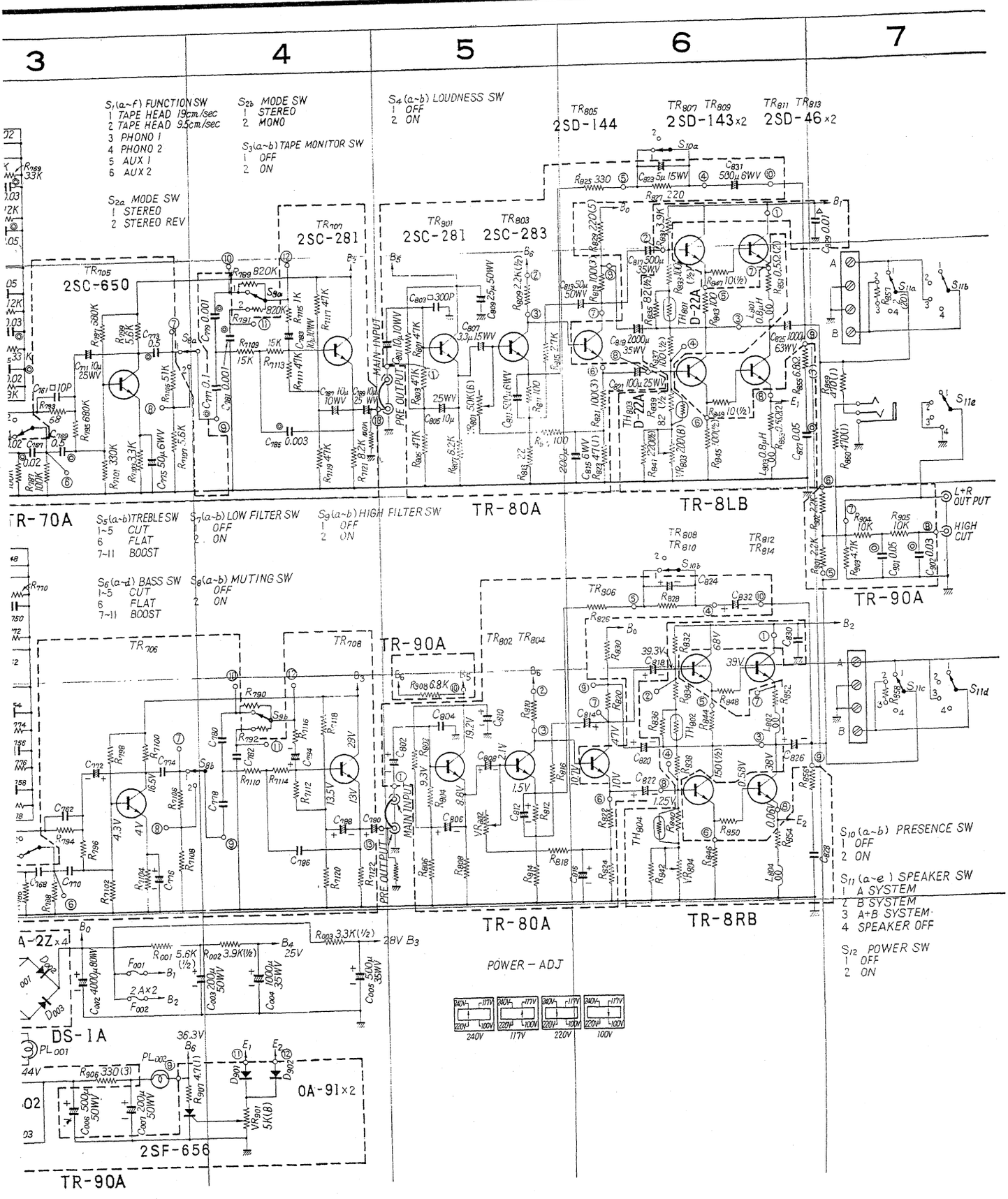
R901 . . . . 1 B	
R902 . . . . 1 B	
R903 . . . . 1 B	
R904 . . . . 1 B	
R905 . . . . 1 A	
R906 . . . . 1 A	
R907 . . . . 2 B	
R908 . . . . 2 A	
C901 . . . . 1 B	
C902 . . . . 1 B	
VR901 . . 2 B	
D901 . . . . 2 A	
D902 . . . . 2 A	
D903 . . . . 1 A	
D904 . . . . 1 A	
SCR901 2 A	

POWER DIODE BRIDGE (DS-1A)



SCHEMATIC DIAGRAM

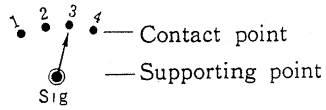



3
4
5
6
7
S1(a~f) FUNCTION SW
1 TAPE HEAD 19cm/sec
2 TAPE HEAD 9.5cm/sec
3 PHONO 1
4 PHONO 2
5 AUX 1
6 AUX 2
S2a MODE SW
1 STEREO
2 STEREO REV
S2b MODE SW
1 STEREO
2 MONO
S3(a~b) TAPE MONITOR SW
1 OFF
2 ON
S4(a~b) LOUDNESS SW
1 OFF
2 ON
TR805 2SD-144
TR807 TR809 2SD-143×2
TR811 TR813 2SD-46×2
TR705 2SC-650
TR707 2SC-281
TR801 2SC-281
TR803 2SC-283
D-22A
TR-70A
TR-80A
TR-8LB
TR-90A
S5(a~b) TREBLE SW
1~5 CUT
6 FLAT
7~11 BOOST
S7(a~b) LOW FILTER SW
1 OFF
2 ON
S8(a~b) HIGH FILTER SW
1 OFF
2 ON
S6(a~d) BASS SW
1~5 CUT
6 FLAT
7~11 BOOST
S9(a~b) MUTING SW
1 OFF
2 ON
TR706
TR708
TR802 TR804
TR806
TR808 TR810
TR812 TR814
TR-80A
TR-8RB
TR-90A
MAIN INPUT
PRE OUTPUT
L+R OUT PUT
HIGH CUT
S10(a~b) PRESENCE SW
1 OFF
2 ON
S11(a~e) SPEAKER SW
1 A SYSTEM
2 B SYSTEM
3 A+B SYSTEM
4 SPEAKER OFF
S12 POWER SW
1 OFF
2 ON
4-2Z×4
DS-1A
2SF-656
TR-90A
POWER-ADJ
240V
117V
220V
100V

SELECTOR CHRT

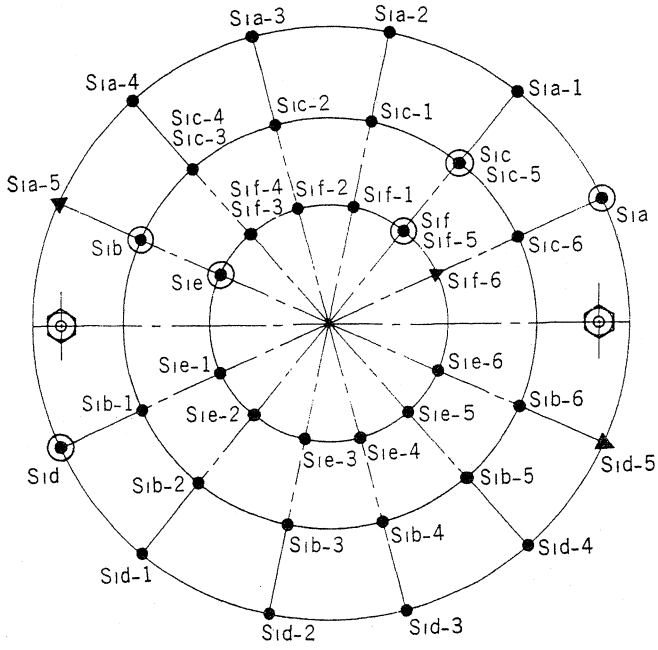
Remove the bonnet and look at the switches from the back side of the amplifier. This chart tells you the location of their contact and supporting points. The smaller the circle, the nearer the points are located to the back of the amplifier.

● indicates a contact point of the selector switch.
◉ indicates a supporting point of the selector switch.
▲ indicates a terminal point of the selector switch.



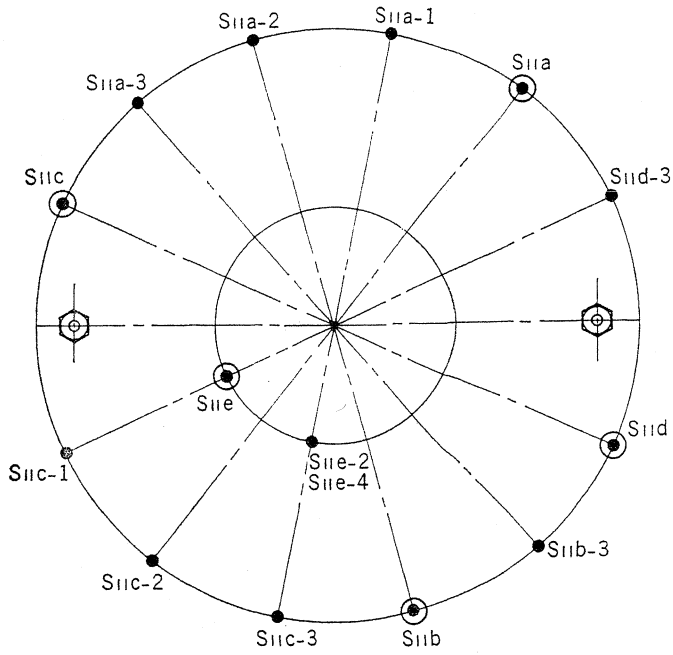
S 11 a 3
- 3 — indicates No. of switch contact point in schematic diagram.
- a — indicates where switch is used in schematic diagram.
- 11 — indicates type of switch.
- S — stands for switch.

FUNCTION



LOCATION OF STOPPER

SPEAKERS SWITCH



LOCATION OF STOPPER

POSITION OF SWITCHES S_1 (a~f)

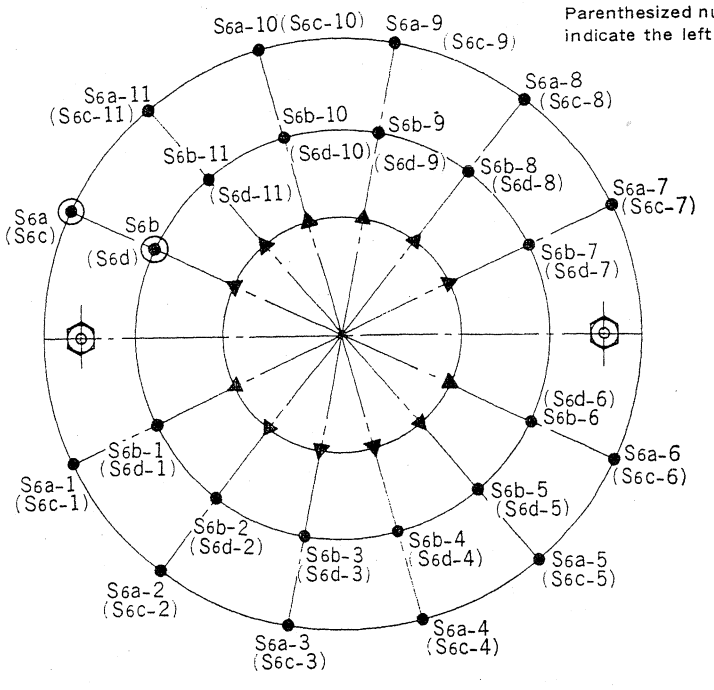
S_{1a}....1 B	1. TAPE HEAD 19 cm/s
S_{1b}....1 A	2. TAPE HEAD 9.5 cm/s
S_{1c}....1 B	3. PHONO 1
S_{1d}....1 D	4. PHONO 2
S_{1e}....1 C	5. AUX 1
S_{1f}....1 D	6. AUX 2

POSITION OF SWITCHES S_{11} (a~d)

S_{11a}....7 B	1. SYSTEM A
S_{11b}....7 B	2. SYSTEM B
S_{11c}....7 D	2. SYSTEM A+B
S_{11d}....7 D	4. SPEAKER OFF
S_{11e}....7 B	

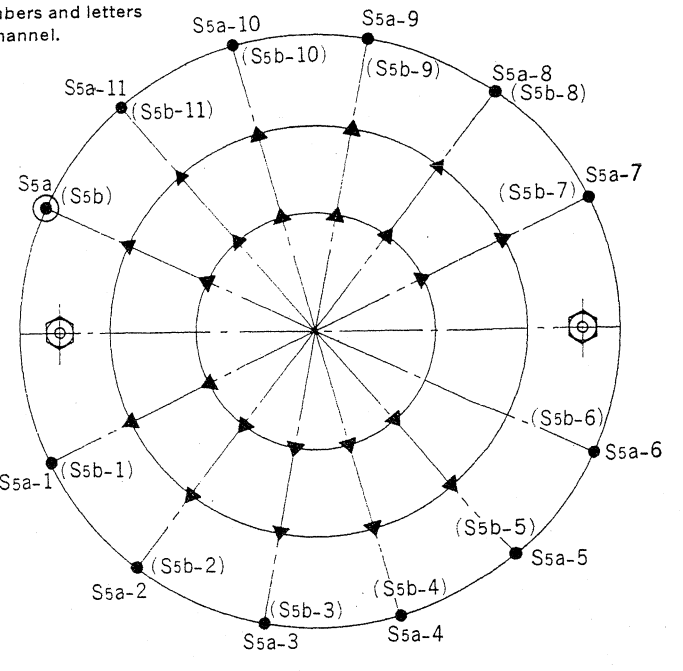
TONE CONTROL (BASS)

Parenthesized numbers and letters indicate the left channel.



LOCATION OF STOPPER

TONE CONTROL (TREBLE)



LOCATION OF STOPPER

POSITION OF SWITCHES S_6 (a~b)

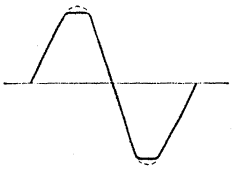
S_{6a} ....3A S_{6b} ....3B S_{6c} ....3C S_{6d} 3D	1~5 CUT 6 FLAT 7~11 BOOST

POSITION OF SWITCHES S_5 (a~b)

S_{5a} ....2A S_{5b} 2C	1~5 CUT 6 FLAT 7~11 BOOST

ALIGNMENT

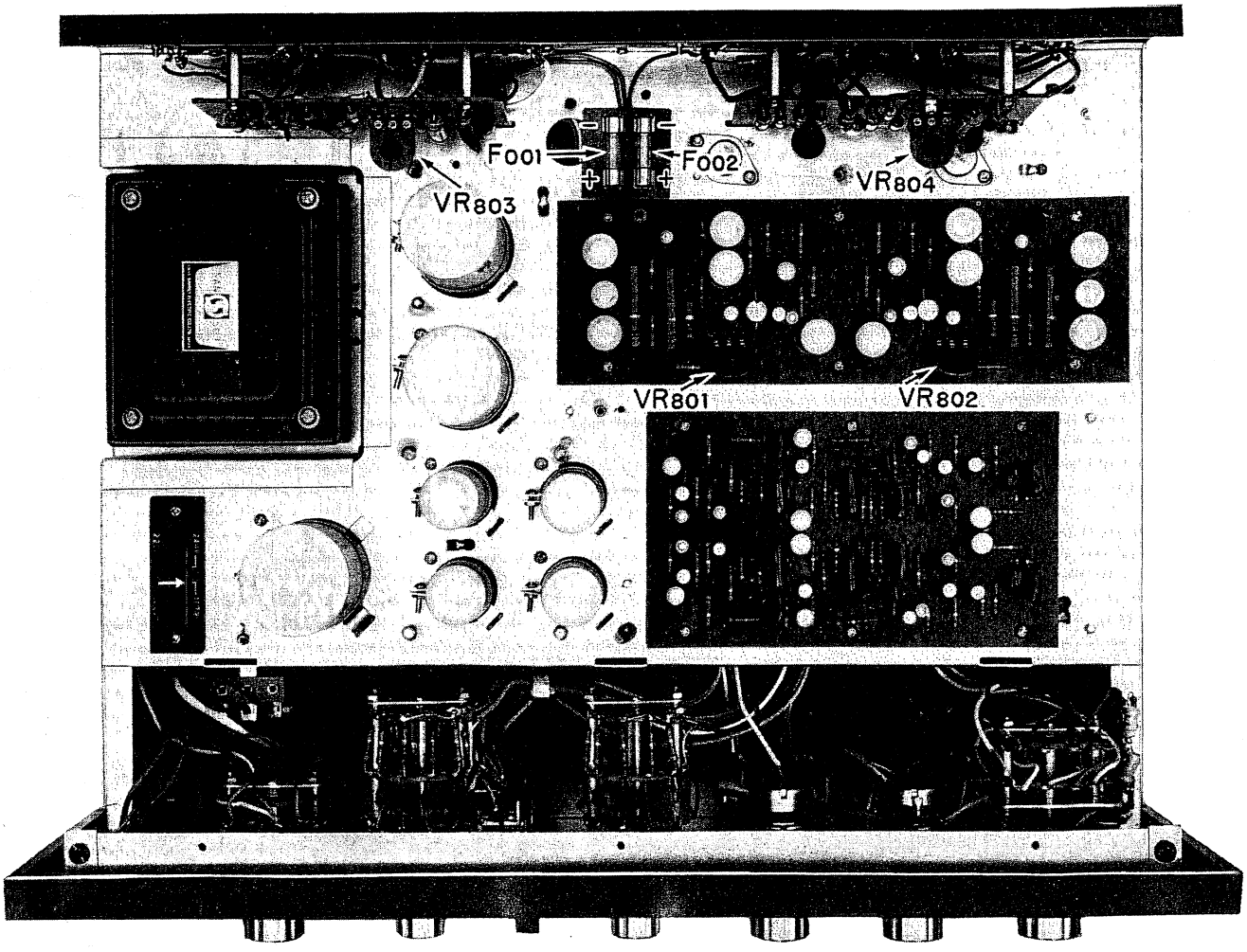
MAIN-AMP SECTION OUTPUT ADJUSTMENT

STEP	CONNECTIONS & ALIGN	REMARKS
1.	Set VOLUME control to minimum.	Oscilloscope required: oscillation frequency of 20 to 20,000 Hz and output voltage of more than 200mV.
2.	Set oscillator to 1,000 Hz and connect it to AUX 2 of channel L.	
3.	Set FUNCTION selector switch to AUX 2	When measuring, BALANCE control to mid-position, TAPE MONITOR switch to SOURCE, MODE switches to STEREO, TONE controls to 0 and other accessory switches to OFF position.
4.	Connect a 8-ohm (or 16-ohm) load resistor (minimum rating of 50 watts) to SYSTEM A LEFT speaker terminal.	
5.	Set SPEAKER selector switch to SYSTEM A.	
6.	Connect oscilloscope to speaker terminal.	
7.	Turn POWER switch ON; turn VOLUME control clockwise little by little; and check output at speaker terminal by using oscilloscope.	
8.	Adjust VR_{801} so that both crests of output wave form are clipped. For channel R, follow same procedure as above. In Step 8, adjust VR_{802} for clipped crests of output wave.	

MAIN-AMP SECTION CURRENT ADJUSTMENT

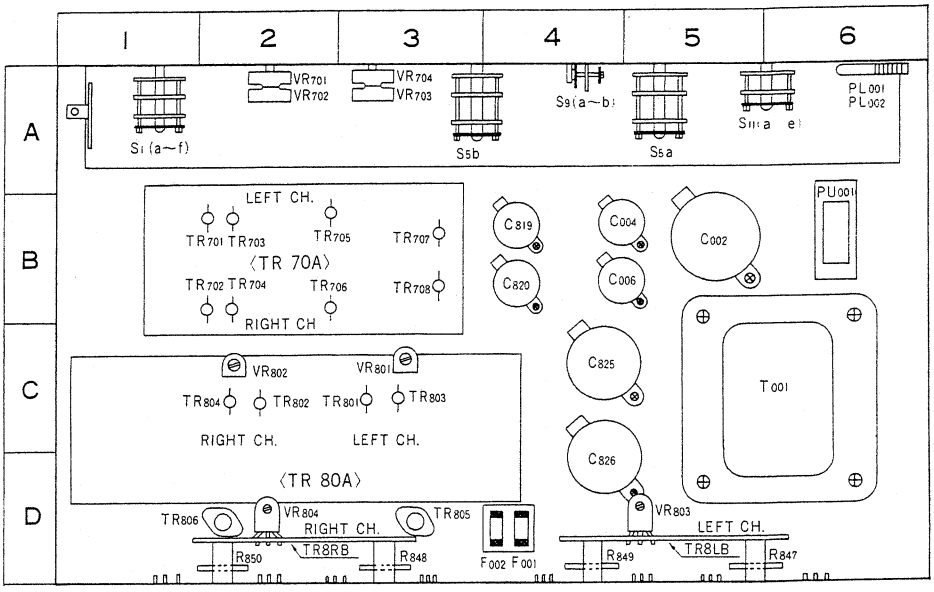
STEP	AMMETER (TESTER)	CONNECTIONS & ALIGN	REMARKS
1.		Remove F_{001} and F_{002}.	Ammeter required: 100mA or 50mA range
2.		Set VR_{803} and VR_{804} to minimum clockwise position.	
3.		Turn POWER switch ON.	
4.	Set to 100mA range.	Set ammeter in place of F_{001}. Connect its ⊕ terminal to B_0, and its ⊖ terminal to B_1 in schematic diagram.	Be sure to turn POWER switch on and then connect ammeter.
5.		Turn VR_{803} and adjust current to 24~28 mA at room temperature of less than 25°C and to 20~24 mA at more than 25°C.	
6.		Turn POWER switch OFF and reset F_{001} to its original position.	
7.	Set to 100mA range.	Turn POWER switch ON and set ammeter in place of F_{002}. Connect its ⊕ terminal to B_0, and its ⊖ terminal B_2 in schematic diagram.	
8.		Turn VR_{804} and adjust current to 22~26mA at room temperature of less than 25°C and to 18~22 mA at more than 25°C.	

TEST POINTS

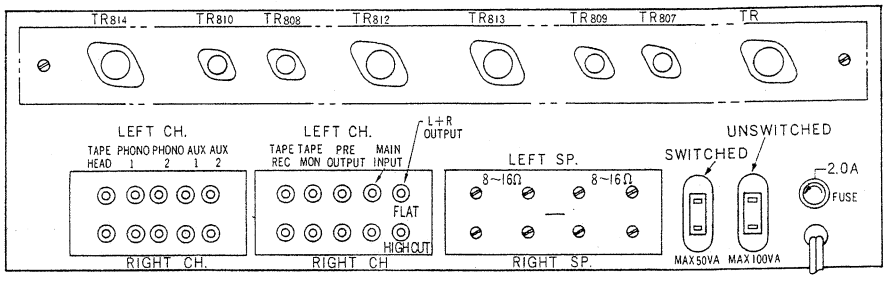


PARTS LAYOUT

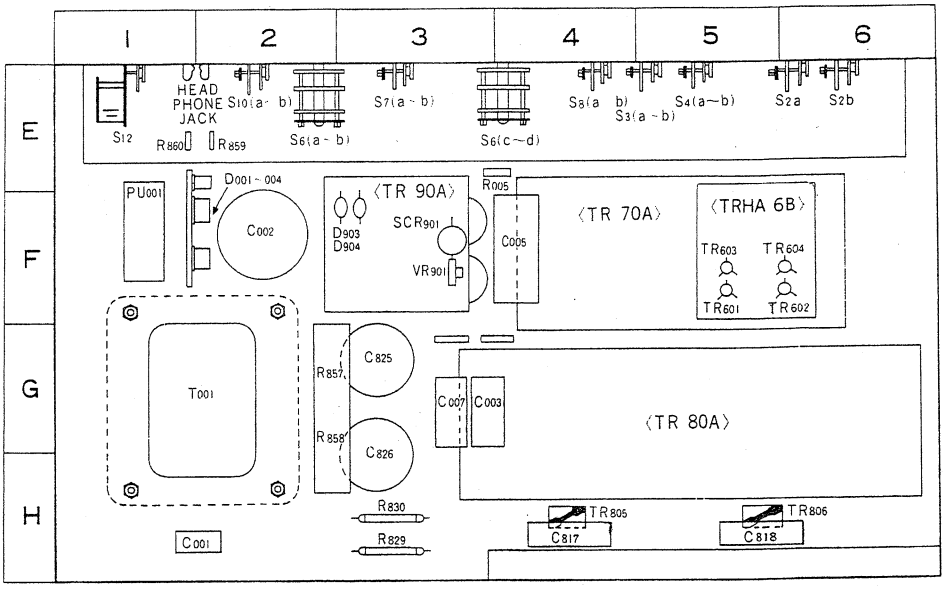
TOP VIEW OF UPPER CHASSIS



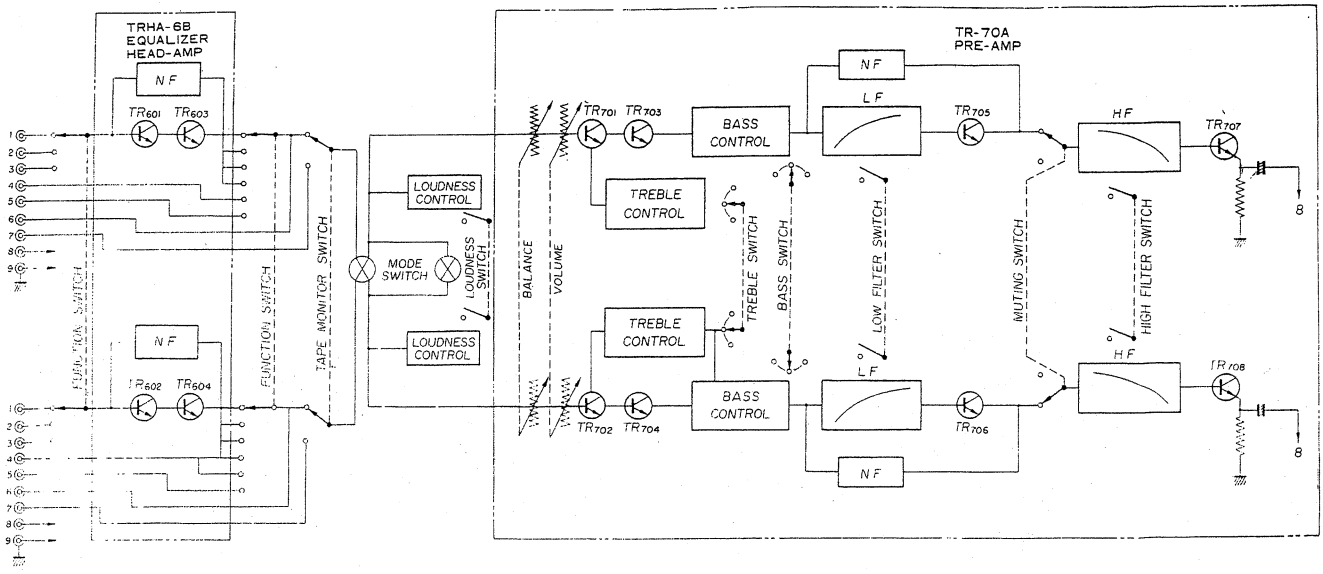
TOP VIEW OF BACK PANEL

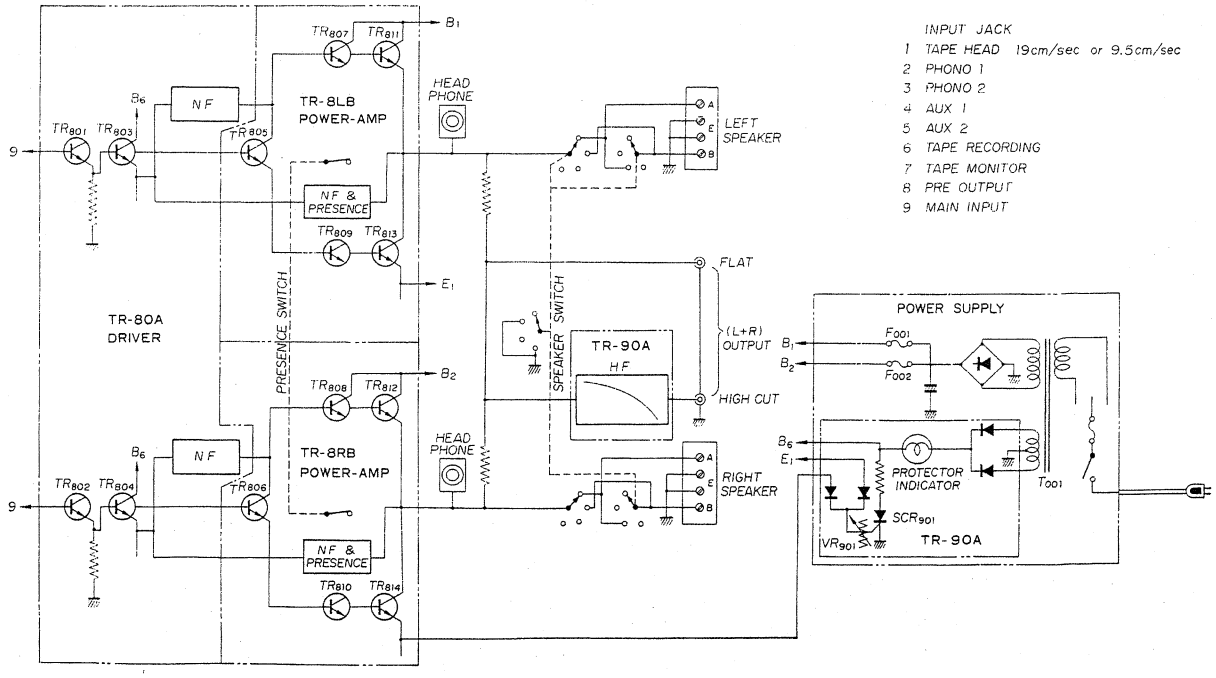


TOP VIEW OF LOWER CHASSIS



BLOCK DIAGRAM





INPUT JACK
1 TAPE HEAD 19cm/sec or 9.5cm/sec
2 PHONO 1
3 PHONO 2
4 AUX 1
5 AUX 2
6 TAPE RECORDING
7 TAPE MONITOR
8 PRE OUTPUT
9 MAIN INPUT

PARTS LIST

A: Parts No.
B: Parts Name
C: Position of Part (Co-ordinate number and letter in Schematic Diagram)
D: Position of Part (Co-ordinate number and letter on Parts layout or name of Printed Circuit)

A	B	C	D
R001	5.6kΩ ½W ±10% Carbon Fixed Resistor	3 E	3 G
R002	3.9kΩ ½W ±10% Carbon Fixed Resistor	4 E	3 G
R003	3.3kΩ ½W ±10% Carbon Fixed Resistor	4 E	3 E
R601	1kΩ ¼W ±10% Carbon Fixed Resistor	1 A	TRHA-6B
R602	1kΩ ¼W ±10% Carbon Fixed Resistor	1 C	TRHA-6B
R603	680kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R604	680kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R605	100kΩ ¼W ±10% Carbon Fixed Resistor	1 A	TRHA-6B
R606	100kΩ ¼W ±10% Carbon Fixed Resistor	1 C	TRHA-6B
R607	1.8kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R608	1.8kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R609	6.8kΩ ¼W ±10% Carbon Fixed Resistor	1 A	TRHA-6B
R610	6.8kΩ ¼W ±10% Carbon Fixed Resistor	1 C	TRHA-6B
R611	390kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R612	390kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R613	220kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R614	220kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R615	680Ω ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R616	680Ω ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R617	470Ω ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R618	470Ω ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R619	12kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R620	12kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R621	1MΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R622	1MΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R623	25kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R624	25kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R625	25kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R626	25kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R627	470kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R628	470kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R629	4.7kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R630	4.7kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6B
R631	82kΩ ¼W ±10% Carbon Fixed Resistor	1 B	TRHA-6B
R632	82kΩ ¼W ±10% Carbon Fixed Resistor	1 D	TRHA-6E
R633	100Ω ¼W ±10% Carbon Fixed Resistor	1 B	1 A
R634	100Ω ¼W ±10% Carbon Fixed Resistor	1 D	1 A
R635	8.2kΩ ¼W ±10% Carbon Fixed Resistor	1 B	1 A
R636	8.2kΩ ¼W ±10% Carbon Fixed Resistor	1 D	1 A
R637	68kΩ ¼W ±10% Carbon Fixed Resistor	1 A	6 H
R638	68kΩ ¼W ±10% Carbon Fixed Resistor	1 C	6 H
R639	180kΩ ¼W ±10% Carbon Fixed Resistor	1 B	6 H
R640	180kΩ ¼W ±10% Carbon Fixed Resistor	1 D	6 H
R701	33kΩ ¼W ±10% Carbon Fixed Resistor	2 B	5 E
R702	33kΩ ¼W ±10% Carbon Fixed Resistor	2 D	5 E

A	B	C	D
R703	100kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R704	100kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R705	560Ω ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R706	560Ω ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R707	820Ω ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R708	820Ω ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R709	1.5kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R710	1.5kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R711	3.3kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R712	3.3kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R713	8.2kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R714	8.2kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R715	33kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R716	33kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R717	12kΩ ¼W ±10% Carbon Fixed Resistor	2 B	5 A
R718	12kΩ ¼W ±10% Carbon Fixed Resistor	2 D	3 A
R719	5.6kΩ ¼W ±10% Carbon Fixed Resistor	2 B	5 A
R720	5.6kΩ ¼W ±10% Carbon Fixed Resistor	2 D	3 A
R721	1.8kΩ ¼W ±10% Carbon Fixed Resistor	2 B	5 A
R722	1.8kΩ ¼W ±10% Carbon Fixed Resistor	2 D	3 A
R723	22kΩ ¼W ±10% Carbon Fixed Resistor	2 B	5 A
R724	22kΩ ¼W ±10% Carbon Fixed Resistor	2 D	3 A
R725	68Ω ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R726	68Ω ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R727	150kΩ ¼W ±10% Carbon Fixed Resistor	3 A	2 E
R728	150kΩ ¼W ±10% Carbon Fixed Resistor	3 C	4 E
R729	150kΩ ¼W ±10% Carbon Fixed Resistor	3 B	2 E
R730	150kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 E
R731	820Ω ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R732	820Ω ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R733	680kΩ ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R734	680kΩ ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R735	560Ω ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R736	560Ω ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R737	3.9kΩ ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R738	3.9kΩ ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R739	5.6kΩ ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R740	5.6kΩ ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R741	68kΩ ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R742	68kΩ ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R743	1.5kΩ ¼W ±10% Carbon Fixed Resistor	2 B	TR-70A
R744	1.5kΩ ¼W ±10% Carbon Fixed Resistor	2 D	TR-70A
R747	390kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R748	390kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R749	390kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R750	390kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R751	390kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R752	390kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A

A	B	C	D
R753	390kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R754	390kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R755	390kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R756	390kΩ ¼W ±10% Carbon Fixed Resistor	2 C	3 A
R757	390kΩ ¼W ±10% Carbon Fixed Resistor	2 A	5 A
R758	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 C	3 A
R759	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 B	5 A
R760	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 D	3 A
R761	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 B	5 A
R762	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 D	3 A
R763	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 B	5 A
R764	390kΩ ¼W ±10% Carbon Fixed Resistor R Type	2 D	3 A
R765	220kΩ ¼W ±10% Carbon Fixed Resistor	3 A	2 E
R766	220kΩ ¼W ±10% Carbon Fixed Resistor	3 C	4 E
R767	68kΩ ¼W ±10% Carbon Fixed Resistor	3 A	2 E
R768	68kΩ ¼W ±10% Carbon Fixed Resistor	3 C	4 E
R769	33kΩ ¼W ±10% Carbon Fixed Resistor	3 A	2 E
R770	33kΩ ¼W ±10% Carbon Fixed Resistor	3 C	4 E
R771	12kΩ ¼W ±10% Carbon Fixed Resistor	3 A	2 E
R772	12kΩ ¼W ±10% Carbon Fixed Resistor	3 C	4 E
R773	12kΩ ¼W ±10% Carbon Fixed Resistor	3 B	2 E
R774	12kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 E
R775	33kΩ ¼W ±10% Carbon Fixed Resistor	3 B	2 E
R776	33kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 E
R777	68kΩ ¼W ±10% Carbon Fixed Resistor	3 B	2 E
R778	68kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 E
R779	220kΩ ¼W ±10% Carbon Fixed Resistor	3 B	2 E
R780	220kΩ ¼W ±10% Carbon Fixed Sesistor	3 D	4 E
R781	27kΩ ¼W ±10% Carbon Fixed Resistor	3 B	TR-70A
R782	27kΩ ¼W ±10% Carbon Fixed Resistor	3 D	TR-70A
R783	150kΩ ¼W ±10% Carbon Fixed Resistor	3 B	TR-70A
R784	150kΩ ¼W ±10% Carbon Fixed Resistor	3 D	TR-70A
R785	100kΩ ¼W ±10% Carbon Fixed Resistor	3 B	TR-70A
R786	100kΩ ¼W ±10% Carbon Fixed Resistor	3 D	TR-70A
R787	100kΩ ¼W ±10% Carbon Fixed Resistor	3 B	TR-70A
R788	100kΩ ¼W ±10% Carbon Fixed Resistor	3 D	TR-70A
R789	820kΩ ¼W ±10% Carbon Fixed Resistor	4 B	4 A
R790	820kΩ ¼W ±10% Carbon Fixed Resistor	4 D	4 A
R791	820kΩ ¼W ±10% Carbon Fixed Resistor	4 B	4 A
R792	820kΩ ¼W ±10% Carbon Fixed Resistor	4 D	4 A
R793	68kΩ ¼W ±10% Carbon Fixed Resistor	3 B	4 A
R794	68kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 A
R795	680kΩ ¼W ±10% Carbon Fixed Resistor	3 B	4 A
R796	680kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 A
R797	680kΩ ¼W ±10% Carbon Fixed Resistor	3 B	4 A
R798	680kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 A
R799	5.6kΩ ¼W ±10% Carbon Fixed Resistor	3 B	4 A
R7100	5.6kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 A

A	B	C	D
R7101	330kΩ ¼W ±10% Carbon Fixed Resistor	3 B	4 A
R7102	330kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 A
R7103	3.3kΩ ¼W ±10% Carbon Fixed Resistor	3 B	4 A
R7104	3.3kΩ ¼W ±10% Carbon Fixed Resistor	3 D	4 A
R7105	51kΩ ¼W ±10% Carbon Fixed Resistor	3 B	TR-70A
R7106	51kΩ ¼W ±10% Carbon Fixed Resistor	3 D	TR-70A
R7107	5.6kΩ ¼W ±10% Carbon Fixed Resistor	3 B	TR-70A
R7108	5.6kΩ ¼W ±10% Carbon Fixed Resistor	3 D	TR-70A
R7109	15kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7110	15kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R7111	47kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7112	47kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R7113	15kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7114	15kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R7115	1kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7116	1kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R7117	47kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7118	47kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R7119	47kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7120	47kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R7121	8.2kΩ ¼W ±10% Carbon Fixed Resistor	4 B	TR-70A
R7122	8.2kΩ ¼W ±10% Carbon Fixed Resistor	4 D	TR-70A
R801	47kΩ ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R802	47kΩ ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R803	47kΩ ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R804	47kΩ ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R805	47kΩ ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R806	47kΩ ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R807	8.2kΩ ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R808	8.2kΩ ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R809	2.2kΩ ½W ±10% Carbon Fixed Resistor	5 B	TR-80A
R810	2.2kΩ ½W ±10% Carbon Fixed Resistor	5 D	TR-80A
R811	100Ω ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R812	100Ω ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R813	22Ω ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R814	22Ω ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R815	2.7kΩ ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R816	2.7kΩ ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R817	100Ω ¼W ±10% Carbon Fixed Resistor	5 B	TR-80A
R818	100Ω ¼W ±10% Carbon Fixed Resistor	5 D	TR-80A
R819	100Ω 3 W ±10% Carbon Fixed Resistor	6 B	TR-80A
R820	100Ω 3 W ±10% Carbon Fixed Resistor	6 D	TR-80A
R821	100Ω 3 W ±10% Carbon Fixed Resistor	6 B	TR-80A
R822	100Ω 3 W ±10% Carbon Fixed Resistor	6 D	TR-80A
R823	47Ω 1 W ±10% Carbon Fixed Resistor	6 B	TR-80A
R824	47Ω 1 W ±10% Carbon Fixed Resistor	6 D	TR-80A
R825	330Ω ¼W ±10% Carbon Fixed Resistor	6 A	TR-80A
R826	330Ω ¼W ±10% Carbon Fixed Resistor	6 C	TR-80A

PARTS LIST

A: Parts No.
B: Parts Name
C: Position of Part (Co-ordinate number and letter in Schematic Diagram)
D: Position of Part (Co-ordinate number and letter on Parts layout or name of Printed Circuit)

A	B	C	D
R827	820Ω ¼W ±10% Carbon Fixed Resistor	6 A	TR-80A
R828	820Ω ¼W ±10% Carbon Fixed Resistor	6 C	TR-80A
R829	220Ω 5 W ±10% Oxide-coated Resistor	6 A	3 H
R830	220Ω 5 W ±10% Oxide-coated Resistor	6 C	3 H
R831	3.9kΩ 1 W ±10% Carbon Fixed Resistor	6 A	TR-8LB
R832	3.9kΩ 1 W ±10% Carbon Fixed Resistor	6 C	TR-8RB
R833	100Ω ½W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R834	100Ω ½W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R835	82Ω ½W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R836	82Ω ½W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R837	3.9kΩ 1 W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R838	3.9kΩ 1 W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R839	82Ω ½W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R840	82Ω ½W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R841	220Ω ½W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R842	220Ω ½W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R843	100Ω ½W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R844	100Ω ½W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R845	100Ω ½W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R846	100Ω ½W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R847	10Ω ½W ±10% Noiseless Carbon Resistor	6 B	5 D
R848	10Ω ½W ±10% Noiseless Carbon Resistor	6 D	3 D
R849	10Ω ½W ±10% Noiseless Carbon Resistor	6 B	4 D
R850	10Ω ½W ±10% Noiseless Carbon Resistor	6 D	2 D
R851	0.5Ω 2 W ±10% Wirewound Resistor	6 B	TR-8LB
R852	0.5Ω 2 W ±10% Wirewound Resistor	6 D	TR-8RB
R850	0.5Ω 2 W ±10% Wirewound Resistor	6 B	TR-8LB
R854	0.5Ω 2 W ±10% Wirewound Resistor	6 D	TR-8RB
R855	6.8Ω 3 W ±10% Carbon Fixed Resistor	6 B	TR-8LB
R856	6.8Ω 3 W ±10% Carbon Fixed Resistor	6 D	TR-8RB
R857	2Ω×2 20W ±10% Cement Resistor Block	7 B	2 G
R858		7 D	
R859	470Ω 1 W ±10% Carbon Fixed Resistor	7 B	2 E
R860	470Ω 1 W ±10% Carbon Fixed Resistor	7 B	1 E
R901	2.2kΩ ¼W ±10% Carbon Fixed Resistor	7 C	TR-90A
R902	2.2kΩ ¼W ±10% Carbon Fixed Resistor	7 C	TR-90A
R903	4.7kΩ ¼W ±10% Carbon Fixed Resistor	7 C	TR-90A
R904	10kΩ ¼W ±10% Carbon Fixed Resistor	7 C	TR-90A
R905	10kΩ ¼W ±10% Carbon Fixed Resistor	7 C	TR-90A
R906	330Ω 3 W ±10% Carbon Fixed Resistor	3 E	TR-90A
R907	4.7Ω 1 W ±10% Carbon Fixed Resistor	3 E	TR-90A
R908	6.8kΩ ¼W ±10% Carbon Fixed Resistor R Type	5 D	TR-90A
C001	0.033μF ±10% 600VDC Oil Capacitor	1 E	2 H
C002	4000μF 80VDC Electrolytic Capacitor	3 E	2 F
C003	200μF 50VDC Electrolytic Capacitor	3 E	3 G
C004	1000μF 35VDC Electrolytic Capacitor	4 E	4 B
C005	500μF 35VDC Electrolytic Capacitor	4 E	4 F

A	B	C	D
C006	500μF 50VDC Electrolytic Capacitor	3 E	4 B
C007	200μF 50VDC Electrolytic Capacitor	3 E	3 G
C601	1.5μF 15VDC Tantalum Electrolytic Capacitor	1 B	TRHA-6A
C602	1.5μF 15VDC Electrolytic Capacitor	1 B	TRHA-6A
C603	150 pF ±10% 50VDC Ceramic Capacitor	1 B	TRHA-6B
C604	150 pF ±10% 50VDC Ceramic Capacitor	1 D	TRHA-6B
C605	30μF 10VDC Electrolytic Capacitor	1 B	TRHA-6B
C606	30μF 10VDC Electrolytic Capacitor	1 D	TRHA-6B
C607	10μF 30VDC Electrolytic Capacitor	1 B	TRHA-6B
C608	10μF 30VDC Electrolytic Capacitor	1 D	TRHA-6B
C609	150 pF ±10% 50VDC Ceramic Capacitor	1 A	TRHA-6B
C610	150 pF ±10% 50VDC Ceramic Capacitor	1 C	TRHA-6B
C611	10μF 25VDC Electrolytic Capacitor	1 A	TRHA-6B
C612	10μF 25VDC Electrolytic Capacitor	1 C	TRHA-6B
C613	50μF 6VDC Electrolytic Capacitor	1 B	TRHA-6B
C614	50μF 6VDC Electrolytic Capacitor	1 D	TRHA-6B
C615	0.004μF ±10% 50VDC Mylar Capacitor	1 B	TRHA-6B
C616	0.004μF ±10% 50VDC Mylar Capacitor	1 D	TRHA-6B
C617	0.01μF ±10% 50VDC Mylar Capacitor	1 B	TRHA-6B
C618	0.01μF ±10% 50VDC Mylar Capacitor	1 D	TRHA-6B
C619	0.003μF ±10% 50VDC Mylar Capacitor	1 B	TRHA-6B
C620	0.003μF ±10% 50VDC Mylar Capacitor	1 D	TRHA-6B
C621	10μF 10VDC Electrolytic Capacitor	1 A	TRHA-6B
C622	10μF 10VDC Electrolytic Capacitor	1 C	TRHA-6B
C623	0.05μF ±10% 50VDC Mylar Capacitor	1 B	TRHA-6B
C624	0.05μF ±10% 50VDC Mylar Capacitor	1 D	TRHA-6B
C701	200 pF ±10% 500VDC Mica Capacitor	2 B	5 E
C702	200 pF ±10% 500VDC Mica Capacitor	2 D	5 E
C703	0.01μF ±10% 50VDC Mylar Capacitor	2 B	5 E
C704	0.01μF ±10% 50VDC Mylar Capacitor	2 D	5 E
C705	0.2μF ±10% 50VDC Mylar Capacitor	2 B	TR-70A
C706	0.2μF ±10% 50VDC Mylar Capacitor	2 D	TR-70A
C707	0.02μF ±10% 50VDC Mylar Capacitor	2 A	5 A
C708	0.02μF ±10% 50VDC Mylar Capacitor	2 C	3 A
C709	0.015μF ±10% 50VDC Mylar Capacitor	2 A	5 A
C710	0.015μF ±10% 50VDC Mylar Capacitor	2 C	3 A
C711	0.01μF ±10% 50VDC Mylar Capacitor	2 A	5 A
C712	0.01μF ±10% 50VDC Mylar Capacitor	2 C	3 A
C713	0.007μF ±10% 50VDC Mylar Capacitor	2 A	5 A
C714	0.007μF ±10% 50VDC Mylar Capacitor	2 C	3 A
C715	0.003μF ±10% 50VDC Mylar Capacitor	2 A	5 A
C716	0.003μF ±10% 50VDC Mylar Capacitor	2 C	3 A
C717	500 pF ±10% 500VDC Mica Capacitor	2 A	5 A
C718	500 pF ±10% 500VDC Mica Capacitor	2 C	3 A
C719	0.001μF ±10% 50VDC Mylar Capacitor	2 B	5 A
C720	0.001μF ±10% 50VDC Mylar Capacitor	2 D	3 A
C721	0.002μF ±10% 50VDC Mylar Capacitor	2 B	5 A
C722	0.002μF ±10% 50VDC Mylar Capacitor	2 D	3 A
C723	0.003μF ±10% 50VDC Mylar Capacitor	2 B	5 A

A	B	C	D
C724	0.003μF ±10% 50VDC Mylar Capacitor	2 D	3 A
C725	0.004μF ±10% 50VDC Mylar Capacitor	2 B	5 A
C726	0.004μF ±10% 50VDC Mylar Capacitor	2 D	3 A
C727	10μF 10VDC Electrolytic Capacitor	2 B	5 A
C728	10μF 10VDC Electrolytic Capacitor	2 D	3 A
C729	300 pF ±10% 505VDC Mica Capacitor	2 B	TR-70A
C730	300 pF ±10% 505VDC Mica Capacitor	2 D	TR-70A
C731	0.03μF ±10% 50VDC Mylar Capacitor	2 A	2 E
C732	0.03μF ±10% 50VDC Mylar Capacitor	2 C	4 E
C733	0.03μF ±10% 50VDC Mylar Capacitor	3 B	2 E
C734	0.03μF ±10% 50VDC Mylar Capacitor	3 D	4 E
C735	10μF 10VDC Electrolytic Capacitor	2 B	TR-70A
C736	10μF 10VDC Electrolytic Capacitor	2 D	TR-70A
C737	10μF 10VDC Electrolytic Capacitor	2 B	TR-70A
C738	10μF 10VDC Electrolytic Capacitor	2 D	TR-70A
C739	50μF 6VDC Electrolytic Capacitor	2 B	TR-70A
C740	50μF 6VDC Electrolytic Capacitor	2 D	TR-70A
C741	10μF 10VDC Electrolytic Capacitor	3 B	TR-70A
C742	10μF 10VDC Electrolytic Capacitor	3 D	TR-70A
C743	0.001μF ±10% 50VDC Mylar Capacitor	3 B	TR-70A
C744	0.001μF ±10% 50VDC Mylar Capacitor	3 D	TR-70A
C745	0.01μF ±10% 50VDC Mylar Capacitor	3 A	2 E
C746	0.01μF ±10% 50VDC Mylar Capacitor	3 C	4 E
C747	0.02μF ±10% 50VDC Mylar Capacitor	3 A	2 E
C748	0.02μF ±10% 50VDC Mylar Capacitor	3 C	4 E
C749	0.03μF ±10% 50VDC Mylar Capacitor	3 A	2 E
C750	0.03μF ±10% 50VDC Mylar Capacitor	3 C	4 E
C751	0.05μF ±10% 50VDC Mylar Capacitor	3 A	2 E
C752	0.05μF ±10% 50VDC Mylar Capacitor	3 C	4 E
C753	0.05μF ±10% 50VDC Mylar Capacitor	3 B	2 E
C754	0.05μF ±10% 50VDC Mylar Capacitor	3 D	4 E
C755	0.03μF ±10% 50VDC Mylar Capacitor	3 B	2 E
C756	0.03μF ±10% 50VDC Mylar Capacitor	3 D	4 E
C757	0.02μF ±10% 50VDC Mylar Capacitor	3 B	2 E
C758	0.02μF ±10% 50VDC Mylar Capacitor	3 D	4 E
C759	0.01μF ±10% 50VDC Mylar Capacitor	3 B	2 E
C760	0.01μF ±10% 50VDC Mylar Capacitor	3 D	4 E
C761	10 pF ±10% 500VDC Mica Capacitor	3 B	TR-70A
C762	10 pF ±10% 500VDC Mica Capacitor	3 D	TR-70A
C763	0.2μF ±10% 50VDC Mylar Capacitor	3 B	TR-70A
C764	0.2μF ±10% 50VDC Mylar Capacitor	3 D	TR-70A
C765	0.02μF ±10% 50VDC Mylar Capacitor	3 B	TR-70A
C766	0.02μF ±10% 50VDC Mylar Capacitor	3 D	TR-70A
C767	0.02μF ±10% 50VDC Mylar Capacitor	3 B	TR-70A
C768	0.02μF ±10% 50VDC Mylar Capacitor	3 D	TR-70A
C769	0.5μF ±10% 50VDC Mylar Capacitor	3 B	TR-70A
C770	0.5μF ±10% 50VDC Mylar Capacitor	3 D	TR-70A
C771	10μF 25VDC Electrolytic Capacitor	3 B	TR-70A
C772	10μF 25VDC Electrolytic Capacitor	3 D	TR-70A

A	B	C	D
C773	0.5μF ±10% 50VDC Mylar Capacitor	3 B	TR-70A
C774	0.5μF ±10% 50VDC Mylar Capacitor	3 D	TR-70A
C775	50μF 6VDC Electrolytic Capacitor	3 B	TR-70A
C776	50μF 6VDC Electrolytic Capacitor	3 D	TR-70A
C777	0.1μF ±10% 50VDC Mylar Capacitor	4 B	TR-70A
C778	0.1μF ±10% 50VDC Mylar Capacitor	4 D	TR-70A
C779	0.001μF ±10% 50VDC Mylar Capacitor	4 B	TR-70A
C780	0.001μF ±10% 50VDC Mylar Capacitor	4 D	TR-70A
C781	0.001μF ±10% 50VDC Mylar Capacitor	4 B	TR-70A
C782	0.001μF ±10% 50VDC Mylar Capacitor	4 D	TR-70A
C783	10μF 10VDC Electrolytic Capacitor	4 B	TR-70A
C784	10μF 10VDC Electrolytic Capacitor	4 D	TR-70A
C785	0.003μF ±10% 50VDC Mylar Capacitor	4 B	TR-70A
C786	0.003μF ±10% 50VDC Mylar Capacitor	4 D	TR-70A
C787	10μF 10VDC Electrolytic Capacitor	4 B	TR-70A
C788	10μF 10VDC Electrolytic Capacitor	4 D	TR-70A
C789	10μF 25VDC Electrolytic Capacitor	4 B	TR-70A
C790	10μF 25VDC Electrolytic Capacitor	4 D	TR-70A
C801	10μF 10VDC Electrolytic Capacitor	5 B	TR-80A
C802	10μF 10VDC Electrolytic Capacitor	5 D	TR-80A
C803	300 pF ±10% 500VDC Mica Capacitor	5 B	TR-80A
C804	300 pF ±10% 500VDC Mica Capacitor	5 D	TR-80A
C805	10μF 25VDC Electrolytic Capacitor	5 B	TR-80A
C806	10μF 25VDC Electrolytic Capacitor	5 D	TR-80A
C807	3.3μF 15VDC Electrolytic Capacitor	5 B	TR-80A
C808	3.3μF 15VDC Electrolytic Capacitor	5 D	TR-80A
C809	25μF 50VDC Electrolytic Capacitor	5 B	TR-80A
C810	25μF 50VDC Electrolytic Capacitor	5 D	TR-80A
C811	500μF 6VDC Electrolytic Capacitor	5 B	TR-80A
C812	500μF 6VDC Electrolytic Capacitor	5 D	TR-80A
C813	50μF 50VDC Electrolytic Capacitor	6 B	TR-80A
C814	50μF 50VDC Electrolytic Capacitor	6 D	TR-80A
C815	200μF 6VDC Electrolytic Capacitor	6 B	TR-80A
C816	200μF 6VDC Electrolytic Capacitor	6 D	TR-80A
C817	500μF 35VDC Electrolytic Capacitor	6 B	4 H
C818	500μF 35VDC Electrolytic Capacitor	6 D	5 H
C819	2000μF 35VDC Electrolytic Capacitor	6 B	4 B
C820	2000μF 35VDC Electrolytic Capacitor	6 D	4 B
C821	100μF 25VDC Electrolytic Capacitor	6 B	TR-80A
C822	100μF 25VDC Electrolytic Capacitor	6 D	TR-80A
C823	5μF 15VDC Electrolytic Capacitor	6 A	TR-80A
C824	5μF 15VDC Electrolytic Capacitor	6 C	TR-80A
C825	1000μF 63VDC Electrolytic Capacitor	6 B	4 C
C826	1000μF 63VDC Electrolytic Capacitor	6 D	4 C
C827	0.05μF ±10% 50VDC Mylar Capacitor	6 B	TR-8LB
C828	0.05μF ±10% 50VDC Mylar Capacitor	6 D	TR-8RB
C829	0.01μF $^{+100}_{-0}$% 250VDC Ceramic Capacitor	7 A	TR-8LB
C830	0.01μF $^{+100}_{-0}$% 250VDC Ceramic Capacitor	6 C	TR-8RB
C831	500μF 6VDC Electrolytic Capacitor	6 A	TR-80A

PARTS LIST

A: Parts No.
B: Parts Name
C: Position of Part (Co-ordinate number and letter in Schematic Diagram)
D: Position of Part (Co-ordinate number and letter on Parts layout or name of Printed Circuit)

A	B	C	D
C832	500μF 6VDC Electrolytic Capacitor	6 C	TR-80A
C901	0.05μF ±10% 50VDC Mylar Capacitor	7 C	TR-90A
C902	0.03μF ±10% 50VDC Mylar Capacitor	7 C	TR-90A
VR701	250kΩ(AC) Balance Control	2 B	2 A
VR702			
VR703	250kΩ(B) Master Volume	2 B	3 A
VR704			
VR801	50kΩ(B) AC Balance Control	5 B	TR-80A
VR802	50kΩ(B) AC Balance Control	5 D	TR-80A
VR803	200Ω(B) DC Balance Control	6 B	TR-8LB
VR804	200Ω(B) DC Balance Control	6 D	TR-8RB
VR901	5kΩ(B) Power Transistor Protector Circuit	4 E	TR-90A
TR601	2SC650 Si N-P-N Epitaxial Transistor	1 B	TRHA-6A
TR602	2SC650 Si N-P-N Epitaxial Transistor	1 D	TRHA-6A
TR603	2SC281 Si N-P-N Epitaxial Transistor	1 B	TRHA-6A
TR604	2SC281 Si N-P-N Epitaxial Transistor	1 D	TRHA-6A
TR701	2SC650 Si N-P-N Epitaxial Transistor	2 B	TR-70A
TR702	2SC650 Si N-P-N Epitaxial Transistor	2 D	TR-70A
TR703	2SC281 Si N-P-N Epitaxial Transistor	2 B	TR-70A
TR704	2SC281 Si N-P-N Epitaxial Transistor	2 D	TR-70A
TR705	2SC650 Si N-P-N Epitaxial Transistor	3 B	TR-70A
TR706	2SC650 Si N-P-N Epitaxial Transistor	3 D	TR-70A
TR707	2SC281 Si N-P-N Epitaxial Transistor	4 B	TR-70A
TR708	2SC281 Si N-P-N Epitaxial Transistor	4 D	TR-70A
TR801	2SC281 Si N-P-N Epitaxial Transistor	5 B	TR-80A
TR802	2SC281 Si N-P-N Epitaxial Transistor	5 D	TR-80A
TR803	2SC283 Si N-P-N Epitaxial Transistor	5 B	TR-80A
TR804	2SC283 Si N-P-N Epitaxial Transistor	5 D	TR-80A
TR805	2SD144 Si N-P-N Planar Transistor	6 B	3 D
TR806	2SD144 Si N-P-N Planar Transistor	6 D	2 D
TR807	2SD143 Si N-P-N Planar Transistor	6 B	5 D
TR808	2SD143 Si N-P-N Planar Transistor	6 D	3 D
TR809	2SD143 Si N-P-N Planar Transistor	6 B	5 D
TR810	2SD143 Si N-P-N Planar Transistor	6 D	2 D
TR811	2SD46 Si N-P-N Mesa Transistor	6 B	6 D
TR812	2SD46 Si N-P-N Mesa Transistor	6 D	3 D
TR813	2SD46 Si N-P-N Mesa Transistor	6 B	4 D
TR814	2SD46 Si N-P-N Mesa Transistor	6 D	1 D
D001	SA-2Z Silicon Diode, Rectifier	3 E	2 F
D002	SA-2Z Silicon Diode, Rectifier	3 E	2 F
D003	SA-2Z Silicon Diode, Rectifier	3 E	2 F
D004	SA-2Z Silicon Diode, Rectifier	3 E	2 F
D901	OA91 Germanium Diode, Overcurrent Detector	4 E	TR-90A
D902	OA91 Germanium Diode, Overcurrent Detector	4 E	TR-90A
D903	SW-05-02 Silicon Diode, Rectifier	3 E	TR-90A

A	B	C	D
D904	SW-05-02 Silicon Diode, Rectifier	3 E	TR-90A
SCR901	2SF-656 Silicon Controlled Rectifier	3 E	TR-90A
TH801	D-22A (22D45T) Thermistor	6 B	TR-8LB
TH802	D-22A (22D45T) Thermistor	6 D	TR-8RB
TH803	D-22A (22D45T) Thermistor	6 B	TR-8LB
TH804	D-22A (22D45T) Thermistor	6 D	TR-8RB
L801	0.8μH High-frequency Compensation	6 B	TR-8LB
L802	0.8μH High-frequency Compensation	6 D	TR-8RB
L803	0.8μH High-frequency Compensation	6 B	TR-8LB
L804	0.8μH High-frequency Compensation	6 D	TR-8RB
PL001	Power Indicator Lamp 8V 0.15A	3 E	6 A
PL002	Protector Indicator Lamp 25V 0.09A	3 E	6 A
F001	AGD 2A Quick-acting Fuse	3 E	4 D
F002	AGD 2A Quick-acting Fuse	3 E	4 D
F003	Power Fuse 2A	2 E	6 D
S1(a~f)	Function Switch	1A, 1B 1C, 1D	1 A
S2a	Mode Switch (STEREO-STEREO REV.)	1 C	6 E
S2b	Mode Switch (STEREO-MONO)	2 C	6 E
S3(a~b)	Tape Monitor Switch	2B, 1D	5 E
S4(a~b)	Loudness Switch	2B, 2D	5 E
S5(a~b)	Tone Control Switch (TREBLE)	2A, 2C	5 A, 3 A
S6(a~d)	Tone Control Switch (BASS)	3A, 3B 3C, 3D	4 E, 2 E
S7(a~b)	Low Filter Switch	3B, 3D	3 E
S8(a~b)	Muting Switch	4B, 4D	4 E
S9(a~b)	High Filter Switch	4B, 4D	4 A
S10(a~b)	Presence Switch	6A, 6C	2 E
S11(a~e)	Speaker Switch	7B, 7D	6 A
S12	AC Power Switch	1 E	1 E
CO1, 2	AC Outlets	1E, 2E	6 D, 5 D
PU001	Line Voltage Controller	2 E	6 B

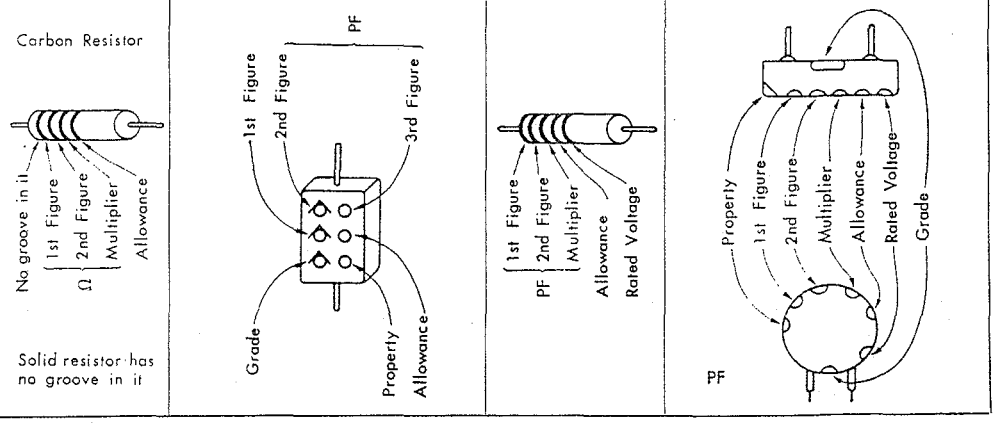
* All rights reserve specifications subject to change without notice.

COLOR CODE

The color code indicates 10 different colors by using figures of 1 to 9. This code agrees with IEC and JIS.

	Common to All Parts			Fixed Resistor	Mica Capacitor				Paper Capacitor		Ceramic Capacity			
Color	1st Figure	2nd Figure	Multiplier	Allowance (%)	Grade	Property	Allowance (%)	Rated Voltage (V)	Allowance (%)	Rated Voltage (V)	Grade	Property	Allowance (%)	Rated Voltage (V)
black	0	0	1		X	A	±20(M)		±20(M)	100	X		±20	
brown	1	1	10^1			B			±5(J)	200				
red	2	2	10^2	±2	Y	C	±2(G)		±2(G)	250	Z			250
orange	3	3	10^3			D		300						
yellow	4	4	10^4			E			±15(L)	400				
green	5	5	10^5			F	±5(J)	500	$^{+20}_{-15}$(V)					500
blue	6	6	10^6						$^{+40}_{-15}$(X)	600			$^{+100}_{-0}$	
purple	7	7	10^7											
grey	8	8	10^8		Z				$^{+10}_{-15}$(Y)		(Y)			
white	9	9	10^9						±10(K)	1000				
golden			10^{-1}	±5				1000				YY YZ		
silver			10^{-2}	±10										
non-colored				±20										

Note



Property	Temperature Coefficient	Divergence of Capacity	Q tanδ	Insulation Resistance
A	Not specified	Not specified	0.5 under	3000MΩ under
B	Not specified	Not specified		
C	−200～+200	±(0.5%+0.5pF)	0.5 over	7500MΩ over but 0.1 over 3000MΩ over
D	−100～+100	±(0.3%+0.1pF)		
E	−20～+100	±(0.1%+0.1pF)		
F	0～+70	±(0.05%±0.1pF)		

Grade	Usable Temperature Range	Test Classfication
X	−55～+85	I or II
Y	−30～+85	I or II
Z	−30～+85	I

Letter	Allowance
G	±2
J	±5
K	±10
M	±20